

Hannamaria Kuusio

A comparative study on challenges in the psychosocial work environment of Finnish and foreign-born general practitioners

RESEARCH



RESEARCH 121 • 2014

Hannamaria Kuusio

A comparative study on challenges in the psychosocial work environment of Finnish and foreign-born general practitioners.

ACADEMIC DISSERTATION

To be presented with the permission of the Faculty of Medicine of the University of Helsinki for public examination in the Lecture Room 2, the Institute of Dentistry, Mannerheimintie 172, 2nd floor, Helsinki on the February 14th, 2014 at 12 noon.

Helsinki 2014

National Institute for Health and Welfare (THL)
and

Hjelt Institute, Department of Public Health,
Faculty of Medicine, Helsinki, Finland



NATIONAL INSTITUTE
FOR HEALTH AND WELFARE

© Hannamaria Kuusio and National Institute for Health and Welfare

Cover design: Outi Rasmus

Layout: Outi Rasmus

ISBN 978-952-302-097-9 (printed)

ISSN 1798-0054 (printed)

ISBN 978-952-302-098-6 (online publication)

ISSN 1798-0062 (online publication)

<http://urn.fi/URN:ISBN:978-952-302-098-6>

Juvenes Print - Finnish University Print Ltd

Tampere, Finland 2014

Supervisors

Research Professor Marko Elovainio
National Institute for Health and Welfare
University of Helsinki

Docent Tarja Heponiemi
National Institute for Health and Welfare

Reviewers

Docent Tea Lallukka
Finnish Institute of Occupational Health

Docent Simo Mannila
National Institute for Health and Welfare

Opponent

Director of Health Care District, Professor Juha Kinnunen
Central Finland Health Care District

Contents

List of original publications	6
Abbreviations	7
Abstract.....	8
Tiivistelmä	10
1. Introduction	12
2. Literature review	15
2.1 Development of primary health care in Finland.....	15
2.2 Foreign-born physicians entering the profession in their country of destination.....	19
2.3 Key concepts of the study	21
2.3.1 Psychosocial stressors in a physician's work environment.....	21
2.3.2 Job-Demand Control model.....	22
2.3.3 Potential work-specific stressors in physicians' work environment	24
2.4 Empirical evidence of psychosocial stressors in a physician's work environment	26
2.4.1 Stressors related to the JDC model.....	26
2.4.2 Potential work-specific stressors.....	27
2.4.3 Differences in physician wellbeing between different health care sectors	28
2.4.4 The psychosocial work environment and the intention to leave one's job	29
3. Summary of the literature review	30
4. Aims of the study	32
5. Methods	33
5.1 Participants and design	33
5.2 Measures.....	38
5.2.1 Health care sector	38
5.2.2 Wellbeing indicators	38
5.2.3 Intention to leave one's job and low affective commitment	39
5.2.4 Psychosocial stressors.....	39
5.2.5 Potential confounders	43
5.3 Statistical analyses.....	45

5.4 Interview analyses	47
5.5 Ethical aspects	47
6. Results	48
6.1 Relationship between wellbeing and psychosocial stressors among Finnish physicians in various health care sectors	48
6.2 Finnish physicians' intention to leave their job and low affective commitment	51
6.3 Experiences of foreign-born GPs in entering the profession in Finland	52
6.4 Experiences of foreign-born GPs of the psychosocial work environment in Finland	54
6.5 Psychological risk factors and intention to leave one's job among Finnish and foreign-born GPs	57
7. Discussion	59
7.1 Psychosocial work stressors partly explain the lower wellbeing at work among Finnish GPs in comparison with other Finnish physicians	60
7.2 Foreign-born physicians entering the profession in Finland – a challenging licensing process	61
7.3 Job satisfaction is lower and reported stressors are higher among foreign-born public-sector physicians than among their peers in the private sector	63
7.4 Both Finnish and foreign-born GPs have a high intention to leave primary health care	65
7.5 Current challenges in primary health care regarding Finnish and foreign-born GPs	67
7.6 Towards an attractive workplace for GPs	69
7.7 Methodological consideration	70
8. Conclusion	72
Acknowledgments	73
References	75

List of original publications

- I Kuusio, H., Heponiemi, T., Aalto, A-M., Sinervo, T., Elovainio M (2012). **Differences in well-being between GPs, medical specialists, and private physicians: The role of psychosocial factors.** Health Serv Res. Feb;47(1):68-85.
- II Kuusio, H., Heponiemi, T., Sinervo, T., Elovainio M (2010). **Organizational commitment among general practitioners: a cross-sectional study of the role of psychosocial factors.** Scand J Prim Health Care. Jun;28(2):108-14.
- III Kuusio, H., Lämsä, R., Aalto, A-M., Manderbacka, K., Keskimäki, I., Elovainio M. **The inflows of foreign-born physicians and their employment and work experiences in health care in Finland** (submitted 2013).
- IV Kuusio, H., Heponiemi, T., Vänskä, J., Aalto, A-M., Ruskoaho, R., Elovainio M (2013). **Psychosocial stress factors and intention to leave job: differences between foreign-born and Finnish-born general practitioners.** Scand J Public Health. Jun;41(4):405-411.

Abbreviations

GP	General Practitioner
THL	National Institute for Health and Welfare
VALVIRA	National Supervisory Authority for Welfare and Health
MSAH	Ministry of Social Affairs and Health
NHI	National Health Insurance
EU	European Union
EEA	European Economic Area
JDC	Job Demand-Control model
JDC-S	Job Demand Control Support model
EPRS	Electronic patient record system
OR	Odds ratio
CI	Confidence interval (95%)
χ^2	Chi Square test
α	Cronbach's alpha

Abstract

Hannamaria Kuusio, A comparative study on challenges in the psychosocial work environment of Finnish and foreign-born general practitioners. National Institute for Health and Welfare. Research 121. 149 pages. Helsinki, Finland 2014.

ISBN 978-952-302-097-9 (printed); ISBN 978-952-302-098-6 (online publication)

The shortage of general practitioners (GPs) threatens the effective functioning of public primary health care in many countries. Working as a GP has lost much of its attractiveness as a career option also among Finnish physicians during the past 15 years, and foreign-born physicians are being increasingly recruited to primary health care. The first aim of the present study was to examine the psychosocial work environment of physicians and how it is associated with their wellbeing and future career plans. GPs were compared to medical specialists and private physicians. The second aim of the study was to investigate the process of foreign-born physicians entering their profession in Finland and also to explore their job satisfaction, work-related stressors and future career interests.

The study data was obtained from two surveys conducted in 2006 and 2010 among random samples of Finnish physicians (N=2,841, response rate 57%; and N=3780, response rate 56%, respectively). In 2010, a survey of all foreign-born physicians resident in Finland (N=1,292) was also conducted (553 respondents, response rate 43%). Qualitative theme interviews were conducted with foreign-born physicians in Finnish primary health care to explore their work history, career choices and plans, job satisfaction and health.

The results showed that the work ability and self-rated health of Finnish GPs were lower than those of Finnish medical specialists and private physicians. Finnish GPs and medical specialists both reported more

psychological distress than private physicians. Wellbeing differences were to some extent explained by higher job stressors among public-sector physicians. Furthermore, Finnish GPs expressed their intention to leave their job more often than other Finnish physicians. For foreign-born physicians, the extensive and challenging licensing process slowed down their career possibilities, particularly among physicians trained outside the EU/EEA. The job satisfaction of foreign-born public-sector physicians was lower than that of foreign-born private physicians, and they also reported higher work-related stressors. Foreign-born GPs more often expressed an intention to leave primary health care than foreign-born medical specialists, private physicians or Finnish GPs.

The present study suggests that the retention of both Finnish and foreign-born GPs will remain a challenge due to the more often expressed intention among GPs to leave primary health care and higher stressors in comparison to private physicians. Investing in a more efficient and multicultural human resource policy in primary health care and giving GPs more influence in decisions concerning their work could attract more GPs to primary health care – both native and foreign.

Tiivistelmä

Hannamaria Kuusio, Vertaileva tutkimus suomalaisten ja ulkomaalaisten terveyskeskuslääkärien haasteista psykososiaalisessa työympäristössä. Terveiden ja hyvinvoinnin laitos. Tutkimus 121. 149 sivua. Helsinki, Finland 2014.

ISBN 978-952-302-097-9 (painettu); ISBN 978-952-302-098-6 (verkkopainatus)

Lääkäripula on osaltaan kriisiyttänyt terveydenhuoltoa ja vaikeuttanut palvelujen saatavuutta. Ilmiö näkyy erityisesti terveyskeskuksissa. Tilanteen helpottamiseksi suunnatut toimet eivät ole Suomessa toistaiseksi osoittautuneet tehokkaiksi. Monessa maassa maahanmuutto ja ulkomaalaisten lääkäreiden rekrytoiminen on nähty eräänä keinona helpottaa lääkäripulaa. Myös Suomessa ulkomaalaisten terveysalan ammattilaisten määrä on noussut voimakkaasti 2000-luvulla. Tässä tutkimuksessa selvitettiin lääkäreiden kokemia psykososiaalisia rasitustekijöitä ja niiden yhteyttä työhyvinvointiin (työkyky, koettu terveys ja psyykkinen kuormittuneisuus) sekä työpaikan vaihtohalukkuuteen. Tutkimus kohdistui julkisella sektorilla työskenteleviin TK-lääkäreihin joita verrattiin julkisen puolen sairaalalääkäreihin sekä yksityislääkäreihin. Lisäksi tutkimuksessa tarkasteltiin ulkomaalaistaustaisia lääkäreitä, erityisesti heidän kokemuksia työllistymisestä, työtyytyväisyydestä ja työhyvinvoinnista Suomessa.

Tutkimuksen kyselyaineisto kerättiin vuosina 2006 ja 2010 satunnaisotoksena suomalaisilta lääkäreiltä (N=2,841, vastausprosentti 57; ja N=3780, vastausprosentti 56). Ulkomaalaistaustaisten lääkäreiden kyselyaineisto, joka kerättiin vuonna 2010, kattoi kaikki Suomessa laillistetut ulkomaalaistaustaiset lääkärit (N=1,292), joilla oli Suomessa kotikunta (N=553, vastausprosentti 43). Laadullista aineistoa varten haastateltiin yhteensä 12 pääkaupunkiseudulla työskentelevää ulkomaalaistaustaista TK-lääkärää.

Suomalaisten TK- lääkärien kokema työkyky ja koettu terveys olivat heikompia kuin muilla lääkäreillä. Julkisen puolen lääkärit (TK- ja sairaalalääkärit) kokivat yksityislääkäreitä enemmän psyykkistä kuormittuneisuutta. Psykososiaaliset raskustekijät selittivät osin lääkärien hyvinvointieroja eri terveydenhuollon sektoreilla. Suomalaisten TK- lääkärien työpaikan vaihtohalukkuus oli suurempi kuin muiden lääkärien. Työn psykososiaaliset vaatimukset, huonot vaikutusmahdollisuudet ja tuen puute lisäsivät lääkärien halua vaihtaa työtä. Ulkomaalaistaustaisilla lääkäreillä työllistymistä hidasti erityisesti monimutkainen ja hankalaksi koettu lupaprosessi, kieliongelmat ja huono tiedon kulku. Työllistymisen jälkeen ulkomaalaistaustaiset julkisen puolen lääkärit olivat ulkomaalaisia yksityislääkäreitä tyytymättömämpiä työhönsä ja kokivat jonkin verran enemmän työn psykososiaalisiin tekijöihin liittyvää raskautta. Ulkomaalaisten TK- lääkärien halu vaihtaa työtä oli suurempi kuin ulkomaalaisten sairaala- ja yksityispuolen lääkärien tai suomalaisten TK- lääkärien.

Tutkimustulosten perusteella voidaan olettaa, että TK- lääkäripula ei tule jatkossa helpottumaan ilman toimenpiteitä johtuen TK – lääkärien korkeista työpaikan vaihtoihmisista sekä koetuista työn psykososiaalisista raskustekijöistä. Turvatakseen sekä suomalais- että ulkomaalaistaustaisten lääkärien työhyvinvointi, työn hallinnan kokeminen ja työssä pysyminen, tulisi panostaa tehokkaaseen ja monikulttuuriseen henkilöstöpolitiikkaan yhteistyössä henkilökunnan kanssa.

1. Introduction

In Finland, health care is largely publicly funded, and municipalities are responsible for providing health services. Public primary health care is provided by health centres employing general practitioners (GPs). Primary health care is also provided by the private sector, and most employers provide outpatient services to their employees through occupational health care. Specialised medical care is provided by hospital districts, which are formed by one or several municipalities operating together. Patients turning to private health care may have some of the cost reimbursed through the National Health Insurance (NHI). Public primary health care work is a cornerstone of the Finnish health care because GPs are typically the first point of contact for any patient, providing primary and preventive health services, referring patients to specialised medical care as required, and providing follow-up treatment after the specialised medical care.

Having a sufficient number of GPs who are professionally satisfied and committed to their organisation is a crucial prerequisite for high-quality public-sector primary health care services and patient safety. Hence, a shortage of GPs and their high turnover is a major concern in many developed countries. For example, 30% of all rural counties in the USA have a shortage of GPs (Thompson et al. 2009). Australia is also experiencing a shortage of GPs in rural areas and increasingly in the metropolitan areas of large cities too (Smith et al. 2005). In the Finnish context, working as a GP at a public primary health care centre has lost much of its attractiveness as a career option among Finnish physicians during the past 15 years. In Finland public primary care health centres lacked six percent of the needed number of physicians in 2000, and in 2008 the percentage had soared to 11 percent (Eronen et al., 2007). The rural areas of northern and eastern parts of the country suffer from the most severe lack of general practitioners (Parmanne, 2007). The problem is well recognised, and as a countermeasure the number of positions for medical students

has been continually increased at all medical schools in Finland since the end of 1990s. The measures taken have nevertheless failed to alleviate the chronic shortage of applicants for GP posts. In fact, the number of physicians working in specialised medical care, occupational care and the private sector has increased more rapidly than the number of newly graduated physicians (Parmanne & Vänskä 2006).

The shortage of physicians has often been seen as a powerful motive for the international migration of physicians (Smith 2008). It has been proposed that foreign-born physicians should fill the work-force gap in areas where it is challenging to recruit native physicians, for instance in primary health care (Mick et al. 2000; Mick & Lee 1999). In Finland, the number of immigrant physicians has historically remained low, and Finland was actually a net exporter of physicians, as it were, until the late 1990s. However, the inflow of physicians has increased since then, and now there are more physicians migrating to Finland than are leaving (Kuusio 2011). Little is known about the process of how foreign-born physicians find employment and integrate with their profession or about their wellbeing or job satisfaction, or about their future career plans in the receiving country.

It has been shown that among physicians (and among employees in general) the psychosocial work environment is associated with health, wellbeing and motivational outcomes such as employee retention or their intention to leave their job (Elovainio et al. 2007; Töyry 2005). One of the most widely used models for the relationship between the psychosocial work environment and health is the Job Strain Model (JDC) (Karasek & Theorell 1990; Karasek 1979). The JDC model states that employees working under high job strain (a combination of high work demands and low job control) are at a higher risk of health problems than those without such job strain. Indeed, previous evidence suggests that high job strain is associated with depression (Mausner-Dorsch & Eaton 2011; Sanderson & Andrews 2006), burnout (Pisanti 2012), psychological distress (Van der Doef & Maes 1999) and the intention to leave one's job (Williams et al. 2001).

Besides the stressors included in the JDC Model, the work environment of physicians is characterised by other stressors which may not be included in the well-established models. However, specific stressors such as patient-related stress, role ambiguity, frustration with electronic patient record systems (EPRS) and stresses related to teamwork can have an even greater impact on physicians' health, wellbeing and motivational outcomes in their work environment.

However, previous studies have shown that physicians' wellbeing, health and job satisfaction vary between a different health care sectors—primary health care, specialised medical care and the private sector (Heponiemi et al. 2010; Hellgren et al. 2006). Variation in work-related stressors may be caused by variations in work environments, expectations and the patient base. Foreign-born physicians may have additional stressors with regard to cultural background, language differences, role expectations and knowledge of the Finnish health care system. Possible differences in work-related stressors across health care sectors as well as in cultural background may offer an explanation for differences in the health, wellbeing and motivational outcomes of physicians between different health sectors.

This study explored challenges faced by Finnish and foreign-born GPs in the psychosocial work environment in Finnish primary health care. GPs were compared to physicians working in other health care sectors such as specialised medical care and the private sector. The focus was on psychosocial stressors in the work of the GPs, on current trends such as multicultural work groups and on challenges relates to foreign-born physicians' employment and work in primary health care.

2. Literature review

2.1 Development of primary health care in Finland

In Finland, development of the health care system used to be mainly directed at building up a nationwide hospital network. This was the case until the 1960s. Of the public expenditure on health care, 10% was allocated to primary health care (Vuorenkoski 2008). Some preventive services such as maternity care and school health were provided by municipalities (Keskimäki 1997). During the 1950s and 1960s, it became evident that the health care system is inadequate for improving public health and preventing diseases. Primary health care needed to be developed further together with hospital care. The National Health Insurance system (NHI) was set up in 1964 with the aim of emphasising primary health care and providing health care free of charge and equally to all Finnish residents (Kokko et al. 2009). Yet despite the introduction of the NHI, the structural and material imbalance between primary health care and specialised medical care persisted.

The Finnish Primary Health Care Act was enacted in 1972 (Primary Health Care Act, 1972). The Act strengthened the role of primary health care, as it assigned the responsibility for primary health care to municipalities and converted GPs from independent practitioners to municipal civil servants. The Primary Health Care Act and a shortage of doctors in rural areas led to the founding of Faculties of Medicine in Kuopio and Tampere in 1972. These two faculties emphasised integrated care and community-oriented curricula (Kumpusalo & Tuomilehto 1987). As a result of the new Act, areas of the health services were incorporated into administrative entities. These included primary medical care, preventive services, home nursing, family planning, dental care and environmental health services (Vuorenkoski 2008). The system was steered by the central government and funded out of tax revenue through national five-year plans. The central government covered 40% to 70% of the operating expenses of primary health care and

also funded the building and equipping of facilities. The first municipal health services, especially in rural areas, were structured as small hospitals staffed by GPs. They were called health centres and constituted a network unique in the international context (Kokko et al. 2009). In 1970s and 1980s, the number of GPs tripled and the positive development of the Finnish health centres continued. The quality of care improved, and regional differences in the availability of services decreased.

In the 1970s and 1980s, occupational health care was developed simultaneously with primary health care, the aim being to extend occupational health services and preventive treatment to all employers. This development resulted in the Occupational Health Care Act, which was enacted in 1979 (Occupational Health Care Act 2001). Under the Act, employers are required to arrange occupational health services for their employees in order to decrease work-related health risks. However, health care services were soon added to preventive occupational health services through agreements between the labour market organisations (Vuorenkoski 2008). Currently occupational health services provide preventive and day-to-day primary health care for employees, accounting for about 13% of outpatient physician visits in Finland, or about 1.7 million visits per year (Vuorenkoski 2008). Occupational health care is funded by employers, and approximately half of the costs are subsidised by the central government through the National Health Insurance (NHI).

Shortage of physicians as a consequence of economic recession and changes in health care in the 1990s

The next significant change in the health care system took place in 1993. The main objective was to create economic incentives for municipalities to improve the efficiency of services. Briefly, the changes included (1) a new system of central government subsidies was introduced, paid to municipalities instead of directly to health service providers, and (2) the central government abandoned its earlier regulatory oversight and concentrated on setting general policy objectives.

This is known as ‘guidance by information’. Furthermore, there was (3) a relaxation of the rules on service provision; for instance, municipalities were now allowed to outsource health care services from the private sector or from other municipalities, whichever would be the most cost-effective (Vuorenkoski 2008). Häkkinen (2005) argued that the most important reform in the 1990s was the change in the subsidy system that reduced central government control and increased the freedom of the municipalities in deciding how to provide the services (Häkkinen 2005).

The deep economic recession of the early 1990s led both central and local government to cut their spending on public services, including health and welfare programmes. These cuts, together with the relatively high unemployment rate among physicians (4.6% in 1994) led to a reduction in the yearly intake of students at medical schools, dropping from 525 starts in 1990 to 379 starts in 1993 (Kota unpublished data 2009). However, in the late 1990s the unemployment rate among physicians fell, to less than 2% by the end of 1998 (Löyttyniemi 2001).

Shortage of physicians has affected public primary health care in particular

Although there are now more physicians than ever in Finland, the shortage of physicians still remains and is particularly acute in public primary health care. There are regional differences in the shortage of physicians, the rural areas of northern and eastern Finland being the most severely short-staffed in GPs (Parmanne 2007). The number of physicians working in specialised medical care and in the private sector has increased more rapidly than the number of newly graduated physicians (THL 2009; Parmanne & Vänskä 2006). Moreover, the number of physicians working in occupational health care nearly doubled between 1996 and 2009 (from 549 to 1066). In 2009, about 7% of Finnish physicians were full-time occupational health physicians (Mattila 2011).

No major reforms have been undertaken in Finland's health care system since 1993, but there have been several minor national and local reforms. The challenges involved in recruiting and retaining GPs are well recognised, and several attempts have been made to cope with the issue. As a result of the 'National project to ensure the future of health care' (2001), the annual number of students accepted at medical schools has increased from 550 to 600 since 2002. The mandatory requirement of practical training at a health centre as part of a medical degree was extended from six months to nine months (MSAH 2003).

In some municipalities, health centres have hired part of their physician workforce from labour leasing companies. These are private enterprises that 'lease' health care personnel to public-sector health care service providers on a temporary basis, particularly primary health centres. The personnel are paid by the labour leasing companies. Other municipalities have outsourced all their primary health care services (health centres) to private enterprises. In the 2000s, up to 47% of all health centres have been continuously hiring part of their physician workforce from labour leasing companies (Eronen et al. 2007). Moreover, some health centres have increasingly delegated tasks to nurses, particularly in rural areas but recently also in bigger cities (Kokko & Nyfors 2009).

Difficulties in recruiting and retaining GPs are a familiar occurrence in many developed countries (Audas et al. 2009; Garces-Ozanne et al. 2011; Mullan et al. 1995). Efforts to improve the supply of health care personnel have been addressed for instance in the Action Plan for the EU Health Workforce. It proposes actions to recognise the skills needed of the future health workforce and to train, recruit and retain health care personnel to better meet future service needs in various health care settings (European Commission 2012).

2.2 Foreign-born physicians entering the profession in their country of destination

It has previously been suggested that foreign-born physicians help fill staff shortages in underserved areas, such as rural areas and in primary health care (Mullan 2005). Research findings in the USA and Canada suggest that foreign-born physicians are more likely to practice in underserved areas than native physicians (Audas et al. 2005; Baer et al. 1998). However, Mick et al. (2000) present evidence to the contrary concerning the intentions and motivations of foreign-born physicians for practicing in rural areas (Mick, Lee & Wodchis 2000). It may be challenging for foreign-born physicians to enter the profession in their country of destination, because in most cases they will find differences in the health care system and processes, the work environment and interpersonal relationships. Moreover, their knowledge, cultural values, standards and skills may not match those of native physicians. The political context also plays a vital role in the integration process of immigrating physicians, specifically the bureaucracy involved (e.g. visas and licensing requirements).

In order to practice medicine in Finland, physicians must have a licence granted by the relevant body, the National Supervisory Authority for Welfare and Health (Valvira). This means that foreign-born physicians will have to go through the process of having their qualifications recognised (Forcier et al. 2004). Within the European Union, the qualifications of physicians trained in the EU/EEA are recognised pursuant to an EU Directive, but there are no standard procedures for physicians trained outside the EU/EEA (OECD 2007). In Finland, physicians who qualified outside the EU/EEA must complete additional studies and pass an examination in Finnish in order to achieve a licence to practice their profession.

The examination consists of three sections, including basic knowledge of clinical medicine and health care, basic knowledge of the health-care system in Finland (including issues central to the practise of medicine in Finland), and clinical skills. A minimum of nine months of hospital training must be completed before taking the test.

Increasing inflow of foreign-born physicians: the Finnish context

In Finland, the inflow of physicians began in 1990 when legislation allowing ethnic Finns to return from Russia to Finland was enacted. Many of these returnees were physicians (Kuusio et al. 2010). Moreover, since 1985 immigration policy in Finland has had a humanitarian dimension, and immigration to Finland consisted largely of refugees until the end of the 1990s, when work-related immigration surpassed it. In 2006, the Government adopted an immigration policy programme to actively promote work-related immigration as a response to the challenges of population ageing and workforce shortages on the Finnish labour market (Government Immigration Policy Programme 2006). The changing policy environment and a lack of qualified personnel in the health care sector have also prompted the international recruitment of health care professionals (Lammintakanen et al. 2010; Opetusministeriö 2002).

Until the late 1990s, Finland was a net exporter of physicians; but changes in mobility patterns over the last 20 years have led to Finland nowadays having a mixed mobility profile. The outflow of physicians has decreased and the inflow of physicians has increased (Kuusio 2011; Kuusio et al. 2010). Foreign-born physicians accounted for less than 4% of the practicing physicians of working age in 2000, whereas the figure in 2010 was almost 8%. According to Statistics Finland, in 2010 a total of 1,750 foreign-born practicing physicians held a Finnish license and lived in Finland (Statistics Finland, 2012). The relative importance of foreign-born physicians to the health workforce has thus been increasing for some time.

The majority of Finland's foreign-born health care professionals are from the European Union (EU), the European Economic Area (EEA) or the Russian Federation. The latter is the major country of origin for foreign-born medical doctors in Finland, with 70 to 80 arriving per year between 2004 and 2008. Estonia has been increasing in importance as a country of origin since 2006, followed by Sweden and Germany. The migration of Estonian health care professionals to Finland has been facilitated by active recruitment, similarity of languages, geographical proximity and close ties between medical organisations. Between 2006 and 2008, Finland granted 266 licenses to physicians from Estonia (Kuusio et al. 2010). Migration from Estonia to Finland was limited before implementation of the free movement policy when Estonia joined the EU.

2.3 Key concepts of the study

2.3.1 Psychosocial stressors in a physician's work environment

The psychosocial work environment is characterised by a wide variety of work-related stressors stemming from the physical or mental demands arising from the workplace that strain employees' abilities to cope, whether in the short term or the long term. In several theories, stress is defined as the outcome of interactional long-term processes between environmental demands and a person's capacity to meet those demands (Selye 1985; McEwen 1998; Lazarus & Folkman 1984). Environmental demands may cause awareness of stress over the appraisal process, and this appraisal (perceived psychosocial stressors) may affect the wellbeing, health and motivational outcomes of physicians. In the present study, wellbeing refers to psychological distress, self-rated health and work ability. These three factors are often used as measures of the different stages of the psychosocial stress process (Elovainio et al. 2005; Lundberg 2006; von Thiele et al. 2006). In the present study, it is assumed that long-term psychological distress will contribute to physical and mental health problems that over time may cause a deterioration in working ability and an increased intention to leave one's job.

Physicians work in many different tasks in various health care sectors such as primary health care, specialised medical care and the private sector. There are different work environments and expectations and a different patient base in different sectors. Work-related stressors may thus also vary, and levels of stressors among physicians will likewise vary. Hence, we may expect that relative wellbeing at work will be different in the various health care sectors. Foreign-born physicians may have additional stressors stemming from their cultural background, language differences, role expectations and knowledge of the Finnish health care system.

2.3.2 Job-Demand Control model

The Job Demand-Control (JDC) model is the most widely tested theoretical approach for studying psychosocial job characteristic and their outcomes (Elovaino & Kivimäki 1998; Landsbergis et al. 1989; Landsbergis 1998; Landsbergis 1992; Van Yperen & Hagedoorn 2003). The JDC model was originally used to explain patterns of exhaustion and job dissatisfaction (Karasek 1979). Later, the JDC model has been expanded to include several other outcomes, particularly in relation to employee health (Calnan et al. 2001; Lallukka et al. 2009; Saastamoinen et al. 2009), sickness absenteeism, (Verhaeghe et al. 2003) and motivational outcomes such as the intention to leave one's job (Noblet et al. 2006; Yao-Mei et al. 2007).

The model postulates that sources of job stress may be found in two basic characteristics of any job, 'job demands' and 'job control'. Job demands are defined by Karasek (1979) as including psychosocial demands such as time pressure, interruption rate, high working pace, conflicting demands and difficult and mentally demanding work. These psychosocial demand factors are referred to as stressors in the present study. The term 'job control' comprises both skill discretion and decision authority. Skill discretion describes the degree to which the job involves a variety of tasks, low levels of repetitiveness, occasions for creativity and opportunities to learn new things and develop special abilities. Decision authority

describes both the employee's ability to make decisions about their own job, and their ability to influence their own work environment (Karasek & Theorell 1990). The key idea behind the JDC model is that job control buffers the impact of job demands on strain and can help to maintain employees' job satisfaction with the opportunity to engage in challenging tasks and learning new skills. The JDC model contains four dimensions.

- 1) 'High job strain' is a consequence of the interaction effects of the high demands of a job and the low job control of the employee. Employers in jobs with 'high job strain' are usually at the highest risk of mental and physical health problems.
- 2) 'Active' jobs have high demands but also high levels of control, and such of jobs are suggested to lead to more active learning and motivation at work in comparison to
- 3) 'Passive' jobs where employees have neither demands nor control.
- 4) 'Low job strain' means that demands are low but job control is high.

Karasek's two standardised questionnaires, the Job Content Questionnaire and the Demand Control Questionnaire, are widely used to measure job strain among employees. In a number of cohort studies, partial versions of these and study-specific questionnaires have been developed that differ from the originals in terms of content, the number of items and the alternative responses given (Fransson et al. 2012). A study that compared alternative versions of the JDC scales in several European countries suggests high agreement between the partial scales and the complete scales (Fransson et al. 2012).

Developing the JDC model further, Karasek & Theorell later formulated a new model called the 'Job Demand-Control-Support' (JDC-S)

model to study the psychosocial work environment, incorporating social support into the model. Social support at work means “overall levels of helpful social interaction available on the job from both co-workers and supervisors” (Karasek & Theorell 1990). Employees with high job strain and low social support are usually at the highest risk of mental and physical health problems. Workplace social support has been explored using the job strain model in several studies of job dissatisfaction, stress, and health outcomes (Landsbergis et al. 1992; Pelfrene et al. 2002).

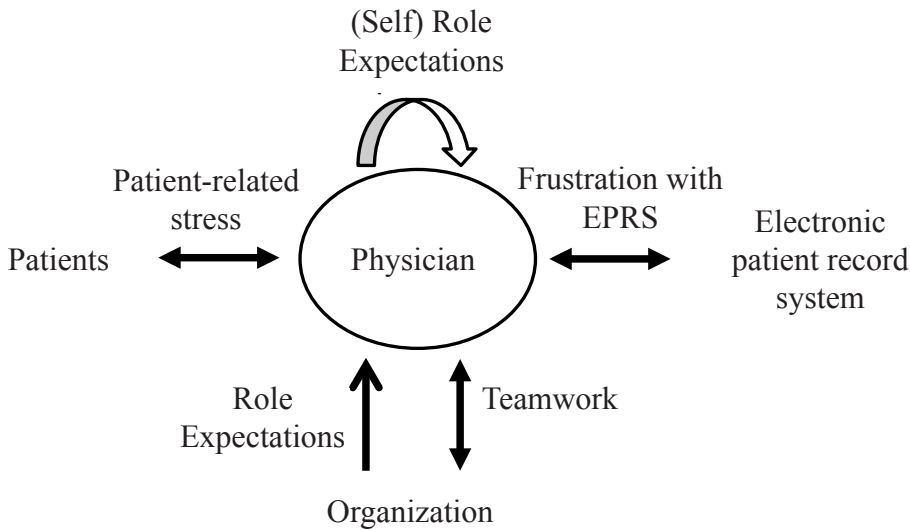
2.3.3 Potential work-specific stressors in physicians’ work environment

The work environments of physicians are characterised by a wide range of potential stressors that are not included in the JDC model yet may be even more relevant than the model’s stressors in the work environment with regard to the health, wellbeing and motivational outcomes of physicians.

In the present study, patient-related stress, role ambiguity, frustration with electronic patient record systems and stresses related to teamwork were selected to capture key factors in physicians’ work-related stressors:

- 1) Physicians work in a health care organisation, which imposes requirements on teamwork with other members of the organisation. The organisation also partly dictates role expectations, which can be different in different part of the organisation, and people may express role expectations explicitly or implicitly.
- 2) Patients are the main external interface physicians are working with.
- 3) Electronic patient record systems are used for administrative duties, which currently form a large part of the workload of physicians.
- 4) The role expectations of the physicians themselves, which might contribute to possible role ambiguities between the physician, surrounding organisations and individuals within the health care system (Figure 1).

FIGURE 1. Potential stressors in a physician's work environment.



Even though the patient relationship is at the core of the work of a physician and often a source of job satisfaction, it is also a source of psychosocial load. Patients with a depressive or anxiety disorder, abrasive personality, unmet expectations, reduced satisfaction and heavy use of health care services cause stress for physicians (Lynch et al. 2007; Kroenke 1996; Jackson & Kroenke 1999; Krebs et al. 2006). These patients are more often seen in primary health care than in other areas (Noyes et al. 1995). Electronic patient record systems were introduced in Finland during the 1990s and are currently used at all health centres, public hospitals and private service providers. EPRS are often criticised in Finland because several different systems are used and they take up a lot of time. Role ambiguity generally means a lack of clarity about expected behaviour in a particular job or position. Hardy and Conway (1988) categorised dimensions of role stress particularly for health care professionals, stating that role stress may arise from different patterns of mismatch in expectations, resources, capability and values about the role (Hardy & Conway 1988). The aspects underlying this theory are role conflict, role ambiguity, role overload, role incompetence or over-qualifica

tion and role incongruity. Teamwork has been defined as “a dynamic process involving two or more health care professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning, or evaluating patient care” (Xyrichis & Ream 2008).

2.4 Empirical evidence of psychosocial stressors in a physician’s work environment

The literature review of empirical evidence includes studies that have used the dimensions of Karasek’s JDC model (job demands, job control and social support). Furthermore, potential work-specific stressors such as patient-related stress, role ambiguity, frustration with electronic patient record systems and stresses related to teamwork are included. Special attention is given to studies investigating the wellbeing of GPs and their intention to leave their jobs. The measures for wellbeing indicators used are psychological distress, work ability and self-rated health. In addition, a separate literature review of the differences in physicians’ wellbeing between health care areas was conducted using the aforementioned psychosocial stressors and wellbeing indicators. The databases used for information retrieval were ‘OVID (Medline)’, ‘Academic Search Elite’ and ‘Cinahl & PsycInfo’. The search was limited to studies published between January 1990 and February 2013.

2.4.1 Stressors related to the JDC model

A study in Britain explored whether GPs experiencing ‘high job strain’ would show heightened levels of cardiovascular arousal compared to GPs experiencing ‘low job strain’. High strain was associated with high systolic and diastolic blood pressure among GPs (O’Connor et al. 2000). Another study in Britain found that GPs in ‘high job strain’ jobs had significantly greater levels of job dissatisfaction and depressive symptoms (including suicidal tendencies, loss of sexual interest, feeling hopeless about the future) in comparison to ‘low job strain’ GPs (O’Connor et al. 2000). A cross-sectional study in Sweden found that GPs with ‘high job

strain' had an increased risk of impaired general health compared with those with 'low job strain' (Sundquist & Johansson 2000).

Previous studies also show the importance of psychosocial stressors as mediators. An increase in job control acted as the mechanism by which improvements were made in mental health and sickness absence rates after a work reorganisation intervention (Bond et al. 2008; Bond and Bunce 2001). A lack of social support has previously been suggested to decrease wellbeing and work ability among physicians working in hospitals (Kivimäki et al. 2001; Elovainio et al. 2002; Nieuwenhuijsen et al. 2010).

2.4.2 Potential work-specific stressors

An earlier Finnish study found that patient-related stress is associated with strain in Finnish physicians (Elovainio & Kivimäki 1998). Another Finnish follow-up study showed that patient-related stress had increased during the study period (2006–2010) among public-sector physicians (Heponiemi et al. 2012). The same study also demonstrated that moving from working at a health centre from other health sectors decreased patient-related stress among physicians. A high patient load (more than 18 patients a day) has been associated with psychosocial stress among GPs in Lithuania (Vanagas & Bihari-Axelsson 2004; Vanagas & Bihari-Axelsson 2005). Calnan found that dealing with “difficult patients” was particularly stressful for GPs (Calnan et al. 2000).

A previous follow-up study in Finland showed that frustration with electronic patient record systems increased in Finland between 2006 and 2010 (Heponiemi et al. 2012). Medical specialists seemed to be the most unhappy with electronic patient record systems. The fact that there are several different systems was considered especially stressful (Vänskä & Kangas 2008; Winblad et al. 2010). There are several studies investigating the introduction of electronic patient record systems (Vishwanath et al. 2010; Williams & Boren 2008) and the association of electronic patient record systems with patient care (Likourezos et al.

2004). Physicians in the USA have experienced that electronic patient record systems are easy to use and physicians have been generally satisfied with their impact on their work, although it has been reported by some physicians that electronic patient record systems have not had a positive impact on patient care (Likourezos et al. 2004).

Only a few studies have explicitly addressed role ambiguity among GPs. These studies have explored GPs' opinion on integrating nurses into the primary health care team. Although most GPs supported expanding the role of nurses in primary health care, the actual division of duties between GPs and nurses was not entirely clear (Battersby & Thomson 1997; Carr et al. 2002). One study showed that role ambiguity predicted a high tendency of burnout among GPs (Kushnir et al. 2004). Poor teamwork has been shown to be associated with increased stress-related distress (Elovainio et al. 2013) and increased intention to leave one's job among physicians (Kivimäki et al. 2007). Facilitation of flexible teamwork has been suggested to be the main factor in solving the problem of occupational isolation in general practice (Aira et al. 2010). Poor teamwork has been also associated with lower job satisfaction (Harris et al. 2007) and higher levels of mental health problems among GPs (Bovier et al. 2009; Branson & Armstrong 2004).

2.4.3 Differences in physician wellbeing between different health care sectors

According to a previous Finnish study, physicians in the private sector were more satisfied and committed to their jobs than those in the public sector. Private-sector physicians also reported fewer psychosocial disorders and sleep problems (Heponiemi et al. 2010). In a previous Finnish study, short sick leaves were more common among general practitioners than in other physicians (Virtanen et al. 2008). Private-sector physicians in Sweden seemed to be more satisfied with their work environment than public-sector physicians (Hellgren et al. 2006). The study conducted in U.S by Landon (2003), suggested that medical specialists were more satisfied with their work than general practitioners (Landon, et al., 2003).

In New Zealand, radiologists in the private sector reported less work-related stress and less burnout in comparison to specialised medical care radiologists (Lim & Pinto 2009). A study in northern Jordan showed that GPs had a higher job stress than medical specialists, partly explained by uncooperative patients and a heavy workload (Boran et al. 2012).

2.4.4 The psychosocial work environment and the intention to leave one's job

There have been a number of studies on the psychosocial work environment and the intention to leave one's job. According to survey conducted in Britain, intentions to leave among physicians predict actually leaving, and job dissatisfaction is associated with an increased likelihood of leaving (Hann et al. 2011). Job dissatisfaction has been associated with intention to leave among physicians (Hann et al. 2011; Kankaanranta et al. 2007; Peterson et al. 2011; Rodwell et al. 2009) and among other health care personnel (Peterson et al. 2011; Simon et al. 2010; Ujvarine et al. 2011). In Australia GPs, who were considering leaving a rural practice experienced a higher level of work-related stress and higher distress (Gardiner et al. 2005a). Linzer found that one third of GPs intended to leave their job within two years and that adverse working conditions were strongly associated with the intention to leave one's job (Linzer et al. 2009).

3. Summary of the literature review

Resources in Finnish primary health care increased steadily from the enactment of the Primary health care Act (1972) until the early 1990s. In 1993, the health care system was changed to reduce central government control, increasing the freedom of municipalities in providing services. At the same time, these changes combined with a deep economic recession caused both central and local government to cut spending on public services. The recession and relatively high unemployment rate among physicians led to a reduction in the intake of medical schools from 1993, leading to a shortage of physicians in the late 1990s. At the same time, primary health care lost its attractiveness as a career option among Finnish physicians, and thus the shortage of physicians was particularly acutely felt in primary health care.

The number of foreign-born physicians practicing in Finland has increased substantially since the late 1990s. Findings in the USA and Britain, for instance, show that foreign-born physicians are often recruited to primary health care in remote areas in order to alleviate the shortage of GPs. It has been suggested that foreign-born physicians entering the profession in their country of destination experience additional challenges due to cultural differences and differences in health care systems. Only a few studies were found concerning the employment of foreign-born physicians in a country of destination, their job leaving intentions or their wellbeing at work. Not only are international and national studies on this topic few in number; they may not even be comparable to the situation in Finland because of differences *inter alia* in the number of foreign-born physicians in the country, languages, cultural differences, organisational structures and health care practices. Several studies have shown that the psychosocial work environment plays a crucial role in physicians' job satisfaction, wellbeing and work performance, including the intention to leave one's job.

Studies using dimensions of the JDC model have often shown that employees with high job strain are at a higher risk of work-related health problems and lower work performance. However, only few studies were found that focused on GPs using the job strain model or on the association between job demands, job control or social support and physicians' wellbeing and intention to leave. The present study fills this research gap. Previous studies have demonstrated that potential specific stressors in the work of physicians (patient-related stress, role ambiguity, frustration with electronic patient record systems and stresses related to teamwork) are associated with low job satisfaction and low wellbeing among GPs. It has also been shown that GPs are less satisfied and more stressed at work than medical specialists and private physicians. Yet only a few studies have investigated stressor variations between health care sectors and whether such stressors explain the wellbeing differences among physicians working in different health care sectors. Furthermore, low job satisfaction among GPs has been shown to increase their already high intention to leave their job. However, not many studies were found that link patient-related stress, role ambiguity, frustration with electronic patient record systems and stresses related to teamwork with the intention to leave one's job.

4. Aims of the study

The overall aim of the present study is to gain evidence of the psychosocial work environment of GPs with reference to job strain (job demands, job control and professional support) and work-related stressors specific to physicians and associated with GPs' career plans (wellbeing, retention or intention to leave primary health care). Foreign-born physicians entering their profession in Finland and their work-related wellbeing are also studied. More specifically, the research questions were:

- 1 Are there differences in the perceived psychosocial work environment and wellbeing between GPs and physicians working in other sectors and do psychosocial stressors explain the potential differences in wellbeing among physicians working in different areas? (Sub-study I)
- 2 Are there differences in intentions to leave one's job and affective commitment between Finnish GPs and Finnish other physicians, and are psychosocial stressors associated with the intention to leave and affective commitment among Finnish physicians? (Sub-study II)
- 3 What are foreign-born physicians' experiences and challenges of employment in Finnish health care, and how do foreign-born physicians perceive their psychosocial work environment in primary health care? (Sub-study III)
- 4 Are there differences in career plans (intention to leave primary health care) between Finnish and foreign-born GPs? (Sub-studies IV)

5. Methods

5.1 Participants and design

Several data sources were employed for answering the research questions of the present study (page 32). Table 1. presents the data sources and methods used in the four separate sub-studies.

Sub-studies I and II employed data from ‘The Finnish Health Care Professionals Survey 2006’, which included a random sample of 5,000 physicians covering 30% of licensed physicians in Finland. Addresses for the mailed questionnaire were drawn from the Finnish Medical Association database. Questionnaires were mailed to physicians and followed up with two reminders. The response rate was 57% (N=2,841 physicians). Responses were received from 1,646 women and 1,146 men, aged 25 to 65.

Sub-study I included physicians for whom 50% or more of their working time involved patient work. A total of 502 physicians were therefore excluded, with 121 physicians further excluded because they were employed at a foundation or a society, and 141 physicians excluded due to incomplete data. Thus, the final sample consisted of 2,047 physicians (1,241 women, 806 men) aged 25–65 (mean 45.1, SD 9.9). Of those, 574 (28%) were GPs working in primary health care, 1,087 (53%) were specialists and 386 (19%) were private physicians. Women accounted for 69% of the GPs, 60% of the specialists and 51% of the private physicians. The final sample was representative of the eligible population in terms of age and employment sector, but women were over-represented. This was expected, because in Finland clinical work is done by a larger percentage of women physicians than men (Elovainio et al. 2007).

Sub-study II included all physicians working in primary health care or in other health care sectors. A total of 116 physicians were excluded because they were unemployed, and 90 physicians were excluded due to incomplete data. The total sample thus consisted of 2, 635 physicians (1,512 women, 1,083 men) aged 25–65 (mean 46.3, SD 9.7). Of those, 545 (21%) were GPs working in primary health care and 2,090 (79%) were physicians working in other health care sectors. Women accounted for 67% of the GPs and 56% of the others. This sample is representative of the eligible population in terms of age, and employment sector (Elovainio 2007 et al).

Data for **Sub-study III** were obtained from ‘Physicians’ working conditions and health 2010’ study, including a survey of Finnish and foreign-born physicians and qualitative interviews with foreign-born GPs.

‘Physicians’ working conditions and health 2010’ was based on a random sample of 7,000 Finnish physicians (33% of the total) and of foreign-born physicians, including all licensed foreign-born physicians resident in Finland (N=1,292) as the eligible population. The term ‘foreign-born physician’ is defined as a physician who was born and educated outside Finland, regardless of whether he/she is a foreign national or a person born abroad who now holds Finnish citizenship.

The questionnaire was translated from Finnish into English, Swedish, Russian and Estonian. Finnish and foreign-born physicians were able to select the language version to which to respond. The questionnaire was translated by professional translators. After the translation, a Russian and an Estonian physician proof-read the respective translations, while the English and the Swedish versions were proof-read by members of the research team with a command of those languages. The data were collected in two phases. First, the link to the online questionnaire was sent to physicians by email, with up to three reminders, during autumn 2010. E-mail addresses were obtained from the Finnish Medical Association.

The second, printed questionnaires were mailed to non-responders (only in Finnish). Mailing addresses were also obtained from the Finnish Medical Association database. Due to the relatively poor response rate from foreign-born physicians (33% after the first printed mailing), one additional reminder was mailed to foreign-born physicians only. Out of 204 online responses, 10 foreign-born physicians answered in English, 111 in Swedish, 16 in Russian and 20 in Estonian.

The response rate was 56% among Finnish physicians (N=3,780) and 43% among foreign-born physicians (N=553). In assessing responders and non-responders among Finnish physicians, it was found that responders were slightly more likely to be women ($\chi^2=25.6$, $p<0.001$) and slightly more likely to be from the youngest and the oldest age group ($\chi^2=37.9$, $p<0.001$) (Aalto et al. 2013). In assessing responders and non-responders among foreign-born physicians, it was found that here too responders were more likely to be women ($\chi^2=18.3$, $p<0.001$) and more likely to be from the youngest age group ($\chi^2=102.6$, $p<0.001$). There were no differences among respondents vs. non-respondents according to the foreign-born physicians' age and area of employment (Aalto et al. 2013).

Qualitative data for Sub-study III comprised 12 theme interviews with foreign-born GPs working in Finland for the purpose of exploring their experiences of the licensing process, employment and work in primary health care. The absence in Finland of previous research on this issue led to the choice of theme interviews as a research method, allowing the formulation of hypotheses of the potential problems encountered by foreign-born GPs in employment and working life in Finland. The 12 interviews provided us with enough information on our topics of interest. The data were collected between September 2009 and January 2010. The chief physicians at health centres in the Helsinki metropolitan area (Helsinki, Vantaa and Espoo) were contacted by e-mail or phone to locate foreign-born physicians currently working there and to seek permission for an interview.

The foreign-born physicians were informed about the study by their chief physicians. The researchers then contacted those foreign-born physicians who were willing to participate by e-mail or by phone and asked them for a personal interview. Interviews were held at six health centres. The interview themes were related to personal experiences: how the GP came to Finland, his/her integration into the Finnish health care system, job satisfaction and wellbeing at work, language skills and cultural differences in the medical profession, career choices and future career plans. The interviews lasted from 45 to 90 minutes. They were audio-recorded with the interviewees' permission and transcribed verbatim. The transcript consisted of 106 pages of single-spaced text. The interviewees, of whom seven were women, varied in age from 30 to 60. Six originally came from Russia, two from EU/EEA Member States, and the remaining four from countries outside these areas. They had been living in Finland for an average of 13 years (4 to 19).

Sub-study IV employed survey data from the 'Finnish Health Care Professionals Survey 2010' (the data collection process is explained above). This sub-study included Finnish and foreign-born GPs. Thus, the final sample consisted of 656 Finnish GPs (444 women, 208 men) aged 25–67 and 176 foreign-born GPs (135 women, 41 men) aged 24–69.

TABLE 1. Summary of the methods in Sub-studies I-IV

Study	Year when data collected	Target group	Outcome	Measures	Statistical analyses	Interviews
I	2006	Finnish GPs, medical specialists and private physicians (N=2047)	Psychological distress (GHQ-12), work ability self-rated health	High demands, job control, stresses related to teamwork, stresses related to role ambiguity, and frustration with electronic patient record systems.	Pearson's two-tailed correlation test, covariance analyses, pairwise Tukey-Kramer Method	-
II	2006	Finnish GP and other physicians* (N=2635)	Intention to leave one's job, low affective commitment	Job demands, job control, professional support	Logistic regression, chi-square test for categorical variables, T-test on continuous variables	-
III	2009-2010	Foreign-born physicians (Interviews N=12, Survey N=498)	-	Job demand, job control, lack of professional support, frustration with information patient systems, patient-related stress, stresses related to team work, job satisfaction, job involvement, team climate	Covariance analyses, bonferroni post-hoc test, chi-square test, logistic regression analyses	Theme interviews, content analysis
IV	2010	Foreign-born GPs and other physicians* (N=832)	Intention to leave one's job	High job demands, high job control, patient-related stress, and stresses related to teamwork	Logistic regression analyses, chi-square test for categorical variables, T-test on continuous variables	-

*Other physicians include medical specialists and private physicians; in the analyses, the groups are combined.

5.2 Measures

5.2.1 Health care sector

In both questionnaires (2006, 2010), respondents were asked to name their principal occupation/working sector. There were 13 response alternatives (1. university central hospital, 2. other municipal/joint municipal board hospital, 3. health centre through municipal employment, 4. health centre through temporary staffing services, 5. municipal occupational health care, 6. government agency or institution, 7. university, 8. private health clinic or centre or private practice, 9. private occupational health care, 10. foundation or association or organisation, 11. pharmaceutical industry, 12. employment service/temporary staffing agency (physicians employed temporarily in locations other than health centres) and 13. other workplace).

Health care sector was coded as 1 = primary health care (health centre through municipal employment, health centre through temporary staffing services and municipal occupational health care), 2 = specialised medical care (university central hospital, other municipal/joint municipal board hospital), and 3 = private sector (private clinics, private occupational health care, and other private employers). All three categories were used in Sub-studies I and III; in Sub-study II, categories 2 and 3 were combined. Sub-study IV only involved primary health care physicians.

5.2.2 Wellbeing indicators

Descriptive statistics of the wellbeing indicators used in Sub-studies I–IV are presented in Table 2.

Psychological distress (GHQ) (Sub-study I). The 12-item version of the General Health Questionnaire (GHQ) was used. Responses were to be given on a scale ranging from 1 to 4, corresponding to ‘less than usual’, ‘no more than usual’, ‘rather more than usual’, or ‘much more than usual’. Cronbach’s alpha was 0.89. The GHQ has been used and validated extensively in the general population (Goldberg et al. 1997).

Work ability (Sub-study I) was assessed with a single item from the Finnish work ability index (Ilmarinen et al. 1997) asking “Assume that your work ability at its best has a value of 10 and 0 means that you could not work at all. What score would you give your current work ability? (range 0–10)?” This single-item work ability indicator has previously been associated with health, for example among Finnish nurses (Elovainio et al. 2010).

Self-rated health (Sub-study I) was assessed with a single question: “How do you rate your health status compared to others of your age?” Answer options were 1 = poor, 2 = rather poor, 3 = average, 4 = rather good, 5 = good. This measure is widely used, and its reliability is tested for instance in relation to mortality (Mossey & Shapiro 1982; Idler & Benyamini 1997).

5.2.3 Intention to leave one’s job and low affective commitment

Intention to leave one’s job (Sub-studies II and IV) was established by the following question: “Would you like to switch from your present physician’s job to another physician’s job?” The response format was: 1 = No, 2 = Perhaps, and 3 = Yes. In the analyses, the responses ‘perhaps’ and ‘yes’ were combined into one. Low affective commitment (Sub-study II) was assessed with an 8-item scale derived from Allen and Meyer’s Affective Commitment scale (Allen & Meyer 1990). The scale measures emotional attachments to, identification with and involvement in a particular organisation. The items were rated on a 5-point Likert-scale ranging from 1 (totally agree) to 5 (totally disagree) ($\alpha=0.80$). The mean response score was calculated, and for the purpose of analysis it was divided into high and low groups through a median split.

5.2.4 Psychosocial stressors

Descriptive statistics of the psychosocial stressors used in Sub-studies I–IV are presented in Table 2.

Job demands (Sub-studies I-IV) were measured using a 5-item scale derived from the (Harris 1989) stress index, using the question “How often have you been distracted, worried or stressed about...?”...“Constant rush and pressure due to uncompleted work”, “Not enough time to perform work properly”, “Insufficient number of physicians”, “Constant interruptions, tasks cannot be completed continuously” and “From beginning to end tight and inflexible work pace”. The response format was a 5-point rating scale ranging from (1) never to (5) very often. These item responses were summed to form a Job Demand scale. The Cronbach’s alpha for this sample was 0.85 in the 2006 survey and 0.87 in the 2010 survey. The mean response of the scale was scored and used in Sub-studies I, III and IV. In Sub-study II, the mean response was divided into low and high groups through a median split. This scale has previously been proven to be useful for measuring job demands among health professionals (Elovainio et al. 2005; Heponiemi et al. 2012).

Job control (Sub-studies I-IV) was measured in Sub-studies I and II by decision authority with 9 items ($\alpha = 0.77$) derived from Karasek’s Job Content Questionnaire (JCQ)(Karasek 1985). Six items on the Job-Control subscale measure skill discretion (job allows for continuous learning, job allows for development of new skills, job entails task variety, non-repetitious work, job requires creativity) while the remaining three items measure the freedom to make independent decisions and to choose how to perform the work. The response format was 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree. This scale has proved to be a valid working condition measure among health professionals (Heponiemi et al. 2010). The short version (3 items) of the job control (decision latitude) measure was used in Sub-studies III and IV (2010 survey). The items were: “I am allowed to take independent decisions in my work”, “I have a great deal to say in my own work” and “I have very little freedom in deciding how to perform my work”. The Cronbach’s alpha for this sample was 0.68. The items were also rated on 5-point rating scales, ranging from (1) strongly disagree to (5) strongly agree.

In Sub-studies I, II and III, the score was coded so that higher scores indicated lower levels of control. In Sub-study IV, the scores were coded so that higher scores indicated higher levels of control.

Professional support (Sub-studies II and III) was measured with a self-developed item with two questions: “How often have you been distracted, worried or stressed about 1) not having anyone to consult with and 2) working alone”. Physicians were asked to choose one of five responses ranging from 1 (never) to 5 (very often). The items were summed to form the professional support scale; the Cronbach alpha for this item was 0.86 in Sub-study II and 0.62 in Sub-study III. The mean response score was divided into ‘good’ and ‘poor’ groups through a median split in Sub-study II, while the mean response score was used in Sub-study III.

Patient-related stress (Sub-studies I,III,IV) was measured on a 3-item scale derived from the health care stress questionnaire (Kivimäki & Lindström 1992): “How often have you been distracted, worried or stressed about...?” Sample items include: “Patients’ expectations frequently differ from those of health care personnel”, “Difficult patients who complain, blame and criticize” and “Patients are unwilling to cooperate and are passive”. The response format was a 5-point rating scale, ranging from (1) never to (5) very often. The item responses were summed; the Cronbach’s alpha for this sample was 0.82 in Sub-studies I and IV and 0.84 in Sub-study III. This scale has been previously proven to be useful for measuring professional support among health professionals (Heponiemi et al. 2012).

Stresses related to role ambiguity (Sub-study I) were measured with a self-developed 3-item scale to evaluate physicians’ potential role ambiguity in relation to work tasks and the workplace community. The items were: “Minor responsibilities take too much time from my primary duties”, “Inconsistent information about job responsibilities and expectations” and “Pressure to work together with other colleagues”. The response format was a 5-point rating scale, ranging from (1) never to (5) very often. These items were summed to form a scale of stresses related to role ambiguity that was

internally consistent ($\alpha = 0.76$). This scale has not been used in previous studies.

Frustration with electronic patient record systems (Sub-studies I,III) was measured on a self-developed 2-item scale ($\alpha = 0.84$ in the 2006 survey and $\alpha = 0.82$ in the 2010 survey). The two items were: “Constantly changing IT systems” and “Poorly working IT programs”. The response format was a 5-point rating scale, ranging from (1) never to (5) very often. This scale has been used in previous Finnish studies (Heponiemi et al. 2012).

Stresses related to teamwork (Sub-studies I,III,IV) were measured on a 4-item scale derived from the Nurse Stress Index (Harris 1989), using the question: “How often have you been distracted, worried or stressed about...?” Sample items included: “Human relationship problems in the workplace”, “Lack of trust and openness in the workplace”, “Pressure to work together with other colleagues” and “Insufficient cooperation in the work group”. The response format was a 5-point rating scale, ranging from (1) never to (5) very often. The items were summed; the Cronbach’s alpha was 0.78 in Sub-study I, 0.85 in Sub-study III and 0.80 in Sub-study IV.

Job involvement (Sub-study III) was measured using four items: “The most important things that happen to me involve my job”, “The major satisfaction in my life comes from my job”, “I live, eat and breathe my job” and “I am very much involved personally with my work”, derived from Lawler (1970) (Lawler 1970) ($\alpha = 0.83$).

Team climate (Sub-study III) was measured using the 4-item Team Climate Inventory (TCI) (Kivimäki & Elovainio 1999) The items were: “We have a ‘we are in it together’ attitude”, “People keep each other informed about work related issues in the practice”, “People feel understood and accepted by each other” and “There are real attempts to share information throughout the practice”. The response scale for the job involvement and team climate scales

was 1 =completely disagree, 2 =somewhat disagree, 3 = undecided, 4 =somewhat agree, 5 =strongly agree. For descriptive purposes, the variables were categorised using the score of 3 as the cutoff point (i.e. scores above 3 indicated strong job satisfaction or job involvement and a good team climate).

5.2.5 Potential confounders

In Sub-study I, the potential confounders were age and gender. In Sub-study II, the potential confounders were age, gender, specialisation status (1 = specialised, 2 = specialisation in progress and 3 = not specialised), full-time working hours per week, and on-call duty (0 = no on-call duties and 1 = work includes on-call duties). In Sub-study III, the potential confounders were age, gender, specialisation status, country of origin, year of migration and residence permit. In Sub-study IV, the potential confounders were demographic factors (age and gender) and specialisation status, on-call duty, employment agreement (permanent or fixed-term) and intention to emigrate. The latter was established by the following question: “Have you had plans for moving to work in another country in the next 12 months?”. The response format was: 1 = No, 2 = Perhaps and 3 = Yes. In the analysis, the alternatives ‘perhaps’ and ‘yes’ were combined.

TABLE 2. Descriptive statistics of the wellbeing indicators and psychological stressors used in Sub-studies I–IV (no adjustments).

	Data 2006(Finnish physicians) (Sub-studies I and II)						Data 2010(Foreign-born physicians) (Sub-study III)						Data 2010 (Finnish and foreign-born GPs) (Sub-study IV)					
	Primary health care		Specialised medical care		Private sector		Primary health care		Specialised medical care		Private sector		Foreign-born GPs		Finnish GPs			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<u>Wellbeing indicators</u>																		
Psychological distress (GHQ)	1.99	0.44	1.99	0.43	1.89	0.41	-	-	-	-	-	-	-	-	-	-	-	-
Work ability	8.47	0.91	8.57	0.87	8.70	0.91	-	-	-	-	-	-	-	-	-	-	-	-
Self-rated health	4.09	1.30	4.19	1.31	4.24	1.27	-	-	-	-	-	-	-	-	-	-	-	-
<u>Psychosocial stressors</u>																		
High job demands	3.69	0.82	3.47	0.84	2.65	0.96	3.49	0.81	3.25	0.90	2.27	0.90	3.47	0.80	3.57	0.88		
High job control	3.87	0.46	3.87	0.51	3.93	0.53	3.82	0.77	3.83	0.94	4.43	0.60	3.84	0.76	3.92	0.72		
Lack of professional support	2.34	0.97	2.03	0.91	2.20	0.97	2.63	1.08	2.25	0.96	2.45	1.02	-	-	-	-	-	-
Patient-related stress	2.70	0.76	2.34	0.81	2.03	0.74	2.78	0.76	2.40	0.84	2.17	0.80	2.77	0.78	2.76	0.74		
Stresses related to role ambiguity	3.23	0.90	3.14	0.95	2.28	0.86	-	-	-	-	-	-	-	-	-	-	-	-
Frustration to EPRS	2.98	1.13	3.23	1.16	2.55	1.14	2.90	1.15	3.08	1.15	2.17	0.92	-	-	-	-	-	-
Stresses related to teamwork	2.16	0.75	2.30	0.80	1.80	0.78	2.21	0.83	2.29	0.97	1.79	0.73	2.20	0.84	2.21	0.79		
Job involvement	-	-	-	-	-	-	3.78	0.79	3.83	0.81	3.93	0.85	-	-	-	-	-	-
Team climate	-	-	-	-	-	-	3.87	0.83	3.80	0.87	3.98	0.76	-	-	-	-	-	-

5.3 Statistical analyses

A summary of the methods used is given in Table 1.

The statistical analyses performed in this study were analyses of covariance (ANCOVA) and logistic regression analyses. Analyses were performed using the SAS statistics 9.2 and SPSS 19.0 software. Cronbach's alpha was used to assess the internal consistency of the sum scales. **Sub-study I** tested the mediating effects following the four-step approach of Baron and Kenny (Baron & Kenny 1986). A series of covariance analyses was conducted in order to meet the requirements of forming a true mediation relationship. Firstly, the initial variable (health care sector) was related to outcome variables (psychological distress, work ability, self-rated health). Secondly, the health care sector was related to mediating variables (high job demands, patient-related stress, stresses related to team work, stresses related to role ambiguity, frustration with electronic patient record systems and lack of job control). Significant differences between health care sector in wellbeing indicators and stressors were additionally analysed using the pairwise Tukey-Kramer method. Thirdly, the mediating variables (stressors) were applied to the outcome variables (wellbeing indicators). Finally, adding the stressors into the model reduced the association between the health care sector and the wellbeing indicator.

In Sub-study II, logistic regression was used to calculate odds ratios (OR) and 95% confidence intervals (95% CI) for a physician's intention to leave his/her job and low affective commitment in primary health care compared to other health care sectors in several steps. Age and gender were added to the model in the first step; graduation year, specialisation status, full-time working hours and on-call duty were added in the next step; and finally, work-related psychosocial factors such as job demands, job control and colleague consultation were added to the model.

In Sub-study III, covariance analyses were used in the psychosocial work environment to compare foreign-born GPs and other foreign-born

physicians. Bonferroni corrected post-hoc tests were used for pairwise comparison. Karasek's job strain variables were formed by dividing the mean responses for job demands and job control into low and high groups (<3 low groups; >3 high groups). The job strain variables were calculated so that low control and low demands constituted a passive job; low control and high demands constituted a high-strain job; high control and low demands constituted a low-strain job; and high control and high demands constituted an active job. In categorical variables, differences in Karasek's job strain variables between GPs and other physicians were first tested by chi-square test. The differences between foreign-born GPs and other foreign-born physicians, adjusting for background variables, were additionally tested using multivariate logistic regression.

In Sub-study IV, logistic regression analyses were conducted on the potential differences in the intention to leave one's job between foreign-born and Finnish GPs, adjusted for age and gender. Separate analyses were then performed on the association between the selected psychosocial stressors and intention to leave one's job among GPs in two steps. Firstly, the analyses were adjusted for demographic factors (age and gender), and secondly, they were additionally adjusted for work-related factors (specialisation status, on-call duty and employment agreement) and intention to emigrate. If the above-mentioned results were significant, it was additionally tested whether the associations between stressors and the intention to leave differed between Finnish and foreign-born GPs with interaction terms. This model was adjusted for age and gender. Finally, the significant interactions were explored by assessing the associations separately among Finnish and foreign-born GPs. The significant association between psychosocial stressors and the intention to leave one's job among foreign-born GPs were additionally adjusted for the country of origin (Russia, Estonia and Others), reason for migration and the length of stay in separate analyses.

5.4 Interview analyses

Transcribed theme interviews were also used in Sub-study III to probe foreign-born GPs' experiences of employment and work in primary health care. The data were collected between September 2009 and January 2010 from foreign-born physicians who worked at health centres in the Helsinki metropolitan area in Finland.

Qualitative content analysis was chosen as the analysis method. The analysis proceeded inductively from smaller categories to major categories. The data were coded using Atlas.ti software. After several readings, the data were classified into 81 sub-categories by three researchers working independently. The results were compared, discrepancies discussed, and the data were merged into 11 categories, which were finally synthesised into two main categories representing various aspects of the licensing process for foreign-born physicians and their experiences in primary health care work.

5.5 Ethical aspects

Ethical approval for the 'Finnish Health Care Professionals Survey 2006' was obtained from the Ethics Committee of the National Research and Development Centre for Welfare and Health (STAKES) (approval number 1/2002). Ethical approval for the 'Physicians' working conditions and health 2010' survey was obtained from the Ethics Committee of the National Institute of Health and Welfare (approval number 7/2010). Also, approval for qualitative interviews with foreign-born physicians was sought from the ethics committees in the municipalities where an ethical license was required.

6. Results

The results of this study are presented structured according to the research questions (page 32). In some cases, the supplementary analyses not shown; in these cases, the source is shown after the results. Sub-study I examines differences in wellbeing between GPs, medical specialists and private physicians and whether the psychosocial stressors mediate these potential wellbeing differences in a different health care sectors. Sub-study II explores Finnish physicians' intention to leave their job and affective commitment to their job. Sub-study III focuses on foreign-born physicians' career opportunities and work experiences in Finnish health care. This is followed by Sub-study IV, a study of physicians' intention to leave their job and of whether psychosocial factors are associated with the intention to leave one's job among foreign-born and Finnish GPs.

6.1 Relationship between wellbeing and psychosocial stressors among Finnish physicians in various health care sectors

Sub-study I involved testing the association between the health care sectors (primary health care, specialised medical care and private sector) and wellbeing indicators among physicians. Another issue was whether psychosocial work-related stressors mediate wellbeing indicators in the various health care sectors. The mediating test was performed using the four-steps approach outlined in the Baron and Kenny mediating test procedure. In the first step, the relation between the health care sector and outcome variables such as psychological distress, work ability and self-rated health was found to be significant; the first step of the mediating procedure was thus confirmed. Post-hoc analyses showed that more elevated psychological distress was experienced by GPs and medical specialists than by private physicians (Figure 2). The reported work ability and self-rated health of GPs were lower than those of medical specialists or private physicians (Figures 3 and 4).

FIGURE 2. Psychosocial distress among physicians working in primary health care, specialised medical care and private sector. Adjusted for age and gender.

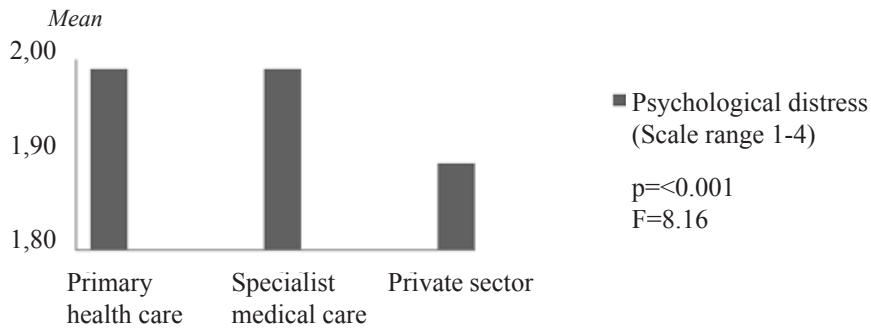


FIGURE 3. Work ability among physicians working in primary health care, specialised medical care and private sector. Adjusted for age and gender.

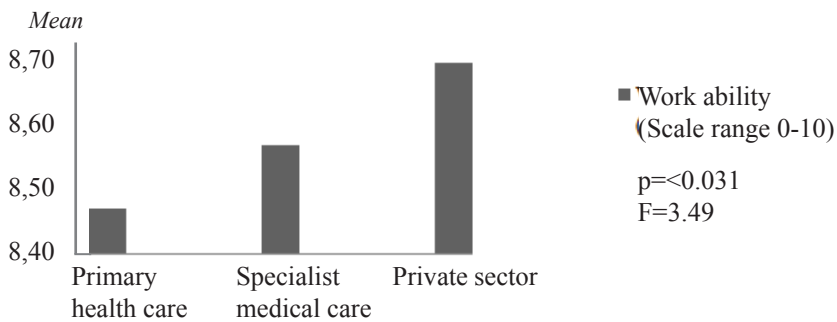
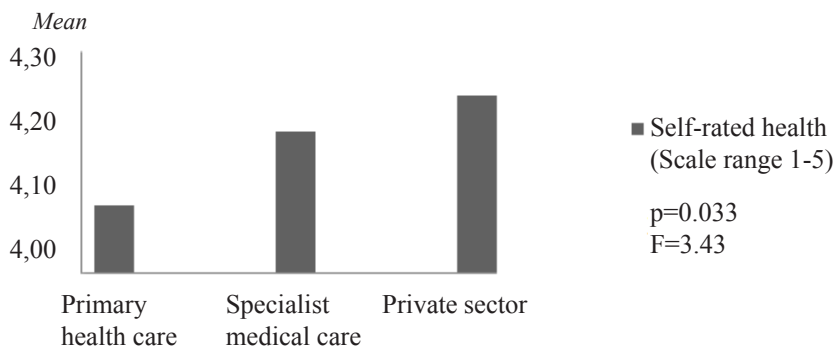


FIGURE 4. Self rated health among physicians working in primary health care, specialised medical care and private sector. Adjusted for age and gender.



In the second step of the Baron and Kenny mediation test procedure, a significant relation was found between health care sector and other psychosocial stressors studied except job control. Thus, job control was excluded from the further analyses. Post hoc analyses showed that GPs reported more job demands and patient-related stresses than other physicians, and medical specialists seemed to report more stress related to team work and electronic patient record systems than GPs or private physicians. Private physicians experienced psychosocial stressors which were tested in this study to a lesser degree than those of GPs and medical specialists. In the third step, wellbeing indicators were also found to be associated with job demands, patient-related stress, stresses related to team work, stresses related to role ambiguity and frustration with electronic patient record systems.

Finally, the results of the mediating test showed that after job demands, stresses related to team work and stresses related to role ambiguity were added to the model, an attenuation in the association between health care sector and psychological distress was noted (Table 3). A clear attenuation in the association between health care sector and work ability was observed after job demands, patient-related stress, stresses related to team work and stresses related to role ambiguity were added to the model. Moreover, job demands, patient-related stress and stresses related to role ambiguity attenuated the association between health care sector and self-rated health. These results thus suggest that the stressors selected in this study at least partially mediated the association between health care sectors and wellbeing.

TABLE 3. Mediation test of the differences in physicians' wellbeing in primary health care, specialised medical care and the private sector. All scores are adjusted for age and gender and for psychological stressor.

<i>Adjusted for age and gender and additionally for</i>	GHQ		Work ability		Self-rated health	
Health care sector	F	p	F	p	F	p
No adjustments	8.16	<0.001	3.49	0.031	3.43	0.033
Job demands	1.76	0.173	0.83	0.434	1.51	0.222
Patient-related stress	4.24	0.015	0.25	0.779	0.70	0.494
Stresses related to team work	1.71	0.182	2.26	0.105	3.21	0.041
Stresses related to role ambiguity	0.80	0.448	1.16	0.313	2.06	0.128
Frustration with electronic patient record systems	3.80	0.023	2.64	0.071	3.58	0.028

6.2 Finnish physicians' intention to leave their job and low affective commitment

When Finnish GPs were compared to Finnish physicians working in other health care sectors, GPs were found to have an intention to leave their job more often (OR=2.05, 95%CI=1.68–2.50). Moreover, the affective commitment of Finnish GPs to their jobs was lower than that of other Finnish physicians (OR=1.50, 95%CI=1.23–1.83). This model was adjusted for age and gender.

After additional adjustment for graduation year and work-related factors such as specialisation, working hours and on-call duty, the difference in intention to leave one's job and affective commitment still remained. A higher intention to leave one's job was associated with young age, non-specialisation and graduating after 1980. A low affective commitment was associated with young age, female gender, non-specialisation and on-call duties.

Even after adding the work-related psychological factors to the model, the difference in the intention to leave one's job remained. However, the association between working in primary health care and low affective commitment was no longer statistically significant. Physicians who had high levels of job demands, low levels of job control or poor professional support were more likely than others to express an intention to leave and to have lower affective commitment (Table 4).

6.3 Experiences of foreign-born GPs in entering the profession in Finland

The qualitative interviews in Sub-study III showed that the licensing process was experienced as unpleasant, conflicting and confusing among non-EU/EEA trained physicians. They faced many obstacles in the licensing process. These foreign-born physicians reported that officials such as employment office personnel or chief physicians at health centres were not familiar with the licensing process or the licensing requirements. Bureaucratic difficulties during the licensing process were also challenging. The Finnish language was felt to be difficult to learn, and most GPs felt that the Finnish system did not support their language training in the best possible way, which consequently impeded them finding employment as physicians because of their inadequate language skills. Moreover, GPs from outside the EU/EEA considered the test requirements for obtaining a license very high and described the test practices as inconsistent. Access courses were reported to be an efficient way to pass the tests, but it was said to be very difficult to enter these courses. Access to internship was also experienced as delaying the process and employment.

In addition, work at Finnish primary health care centres was experienced as diverse and challenging. A varying and challenging job profile, and a need for more than just medical expertise with patients, such as an understanding of wider social structures and empathy, was considered motivational by some foreign-born GPs and stressful by others.

TABLE 4. Physicians' intention to leave their job and low affective commitment to their job. Results of the logistic regression analyses. The model is adjusted for age, gender, and graduation year, specialisation, working hours, on-call duty, job demands, job control and professional support.

	<u>Intention to leave one's job</u>			<u>Low affective commitment</u>		
	OR	(95% CI)	p	OR	(95% CI)	p
<i>Health care sector</i>						
Other health care	1.00			1.00		
Primary health care	1.63	1.30-2.03	<0.001	1.17	0.93-1.47	0.177
Age	0.97	0.95-0.98	<0.001	0.97	0.96-1.00	<0.001
<i>Gender</i>						
Male	1.00			1.00		
Female	0.87	0.72-1.05	0.149	0.66	0.55-0.80	<0.001
<i>Graduation year</i>						
< 1980	1.00			1.00		
1981-2006	1.35	1.04-1.80	0.040	1.33	1.01-1.76	0.046
<i>Specialisation status</i>						
Specialised	1.00			1.00		
Specialising undergoing	1.00	0.76-1.30	0.975	1.13	0.86-1.49	0.389
Not specialised	1.24	0.95-1.63	0.118	1.37	1.04-1.80	0.028
Working hours (total)	1.00	0.99-1.01	0.955	0.97	0.96-0.98	<0.001
<i>On-call duty</i>						
No	1.00			1.00		
Yes	0.94	0.78-1.14	0.547	1.03	0.85-1.25	0.740
<i>Job demands</i>						
Low	1.00			1.00		
High	1.88	1.56-2.28	<0.001	1.70	1.42-2.06	<0.001
<i>Job control</i>						
Low	1.00			1.00		
High	0.52	0.44-0.63	<0.001	0.36	0.30-0.43	<0.001
<i>Professional support</i>						
Good	1.00			1.00		
Poor	1.63	1.34-1.97	<0.001	1.49	1.24-1.79	<0.001

Certain patient groups were found to be challenging, such as patients with multiple diseases, as their treatment would have required more time than allocated. In addition, consumer-oriented patients who had specific expectations and directions for the GP consultation or just wanting a referral to a specialist were found to be demanding. All respondents mentioned the need to work very long hours in order to complete all daily duties. They also found electronic patient record systems to be complex because of the many different systems used, depending on the health centre and municipality. Comprehensive orientation, social relationships at work and consultation opportunities were highly valued and often but not always experienced at the workplace.

6.4 Experiences of foreign-born GPs of the psychosocial work environment in Finland

In Sub-study III, the jobs of foreign-born GPs, medical specialists and private physicians were assessed using Karasek's classification of the job strain model. According to the results, 50% of the foreign-born GPs were classified as having an 'active' job, 29% as having a 'low-strain' job, 16% as having a 'high-strain' job and 2% as having a 'passive' job (Figure 5). GPs had 'active' jobs significantly more often than foreign-born physicians working in other health care sectors. There were also significant differences in the level of 'low-strain' jobs between GPs and private physicians.

FIGURE 5. Frequencies of the type of work among physicians in different health care sectors using Karasek's Demand-Control model

		Job demands			
		Low		High	
Job Decision Latitude	Low	Passive job		High-strain job	
		%	N		% N
	GPs	3	5	GPs	16 30
	Medical specialists	6	16	Medical specialists	17 43
	Private physicians	2	1	Private physicians	0 0
	X ² =4.1; p<0.126		X ² =9.7; p=0.008		
High	Low-strain job		Active job		
	%	N		% N	
GPs	29	55	GPs	52 99	
Medical specialists	39	100	Medical specialists	38 96	
Private physicians	78	39	Private physicians	20 10	
X ² =39,6; p<0.001		X ² =20,3; p<0.001			

There was a significant difference in job satisfaction between foreign-born GPs and foreign-born private physicians. No significant results were found in respect of job involvement and team climate among foreign-born GPs, medical specialists and private physicians (Figure 6). Foreign-born public physicians (GPs and medical specialists) experienced higher job demands than foreign-born private physicians. There was a significant difference in job control between foreign-born medical specialists and private physicians. No significant results were found in respect of professional support (Figure 7).

Foreign-born GPs' patient-related stress was significantly higher than that of foreign-born medical specialists or private physicians. A higher level was found among foreign-born public sector physicians than among private physicians in frustration with electronic patient record systems and stresses related to team work (Figure 8).

FIGURE 6. Differences in job satisfaction, job involvement and team climate among foreign-born GPs, medical specialists and private physicians. Mean scores adjusted for age, gender, country of origin, year of migration, residence permit

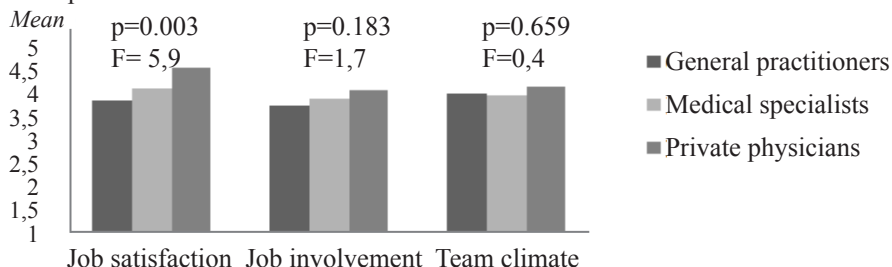


FIGURE 7. Differences in job demands, job control and lack of professional support among foreign-born GPs, medical specialists and private physicians. Mean scores adjusted for age, gender, country of origin, year of migration, residence permit

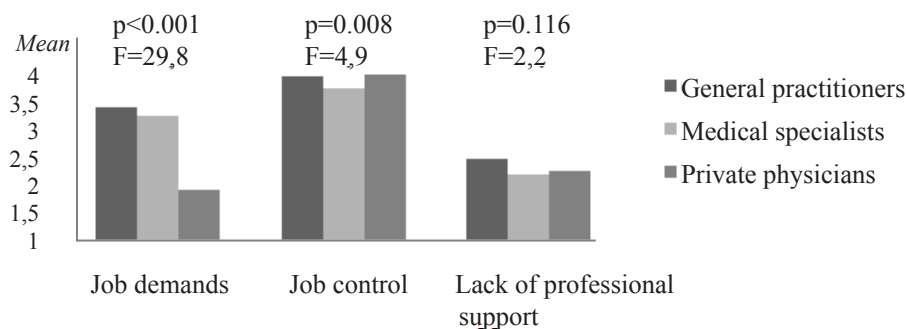
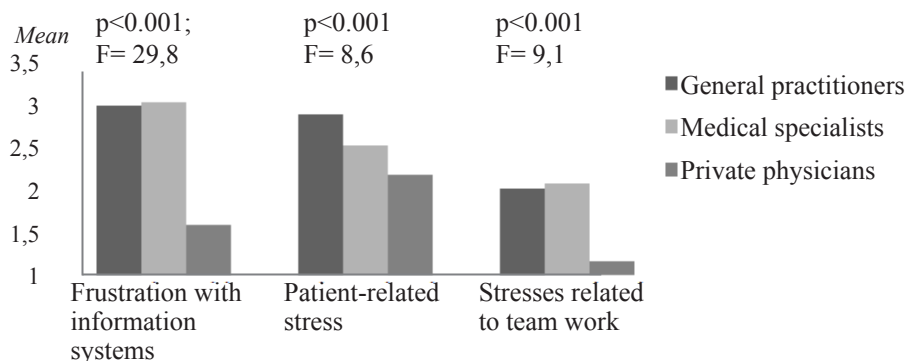


FIGURE 8. Differences in frustration with information systems, patient-related stress and stresses related to team work among foreign born GPs, medical specialists and private physicians. Mean scores adjusted for age, gender, country of origin, year of migration, residence permit.



6.5 Psychological risk factors and intention to leave one's job among Finnish and foreign-born GPs

In Sub-study IV, it was found that foreign-born GPs had a higher intention to leave their job than Finnish GPs, when adjusted for age and gender (OR=1.53, 95%CI=1.01–2.32). Further logistic regression analyses showed that foreign-born GPs working in primary health care had a higher intention to leave their job than foreign-born physicians working in other health sectors (OR=3.73, 95%CI=2.34–5.93). The model was adjusted for age and gender. Younger physicians had a higher intention to leave than older physicians. Gender was not significant.

The association of high job demands (OR=2.04, 95%CI=1.70–2.56), high job control (OR=0.48, 95%CI=0.38–0.61), poor professional support (OR=1.56, 95%CI=1.33–1.84), patient-related stress (OR=1.48, 95%CI=1.18–1.84) and stresses related to teamwork (OR=1.77, 95%CI=2.20) to the intention to leave one's job was significant among all GPs, and this association persisted after adjustment for age, gender, specialisation status, on-call duty, employment agreement and intention to emigrate.

A significant association was found in interaction analyses between the country of origin of GPs on the one hand and high job control (Wald= 4.85; $p=0.028$), patient-related stress (Wald= 4.91; $p=0.027$) and stresses related to teamwork (Wald= 4.13; $p=0.042$) on the other. These models were adjusted for age and gender. High job control, lower levels of patient-related stress and stresses related to teamwork were associated with a higher intention to leave one's job among Finnish GPs but not among foreign-born GPs.

No interaction effect was found between the country of origin of GPs on the one hand and job demands (Wald= 0.89; $p=0.345$) and professional support (Wald= 0.006; $p=0.940$) on the other. Thus, higher job demands and poor professional support were associated with a higher intention to leave both among both foreign-born GPs and Finnish GPs (Table 5).

TABLE 5. Associations between psychological work-related stressors and the intention to leave one's job (0=no, 1=yes) in separate analyses among foreign-born and Finnish GPs. Logistic regression analyses with odds ratios (OR) and 95% confidence intervals (95% CI).

	Age and gender adjusted		Fully adjusted ^a	
	Foreign-born GPs	Finnish GPs	Foreign-born GPs	Finnish GPs
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Psychological stressors:				
Job demands	1.60 (0.96-2.65)	2.19 (1.75-2.74)	1.85 (1.04-3.30)	2.08 (1.64-2.63)
High job-control	0.85 (0.51-1.42)	0.42 (0.32-0.55)	0.80 (0.46-1.39)	0.46 (0.35-0.61)
Poor professional support*	1.60 (1.07-2.40)	1.56 (1.30-1.87)	1.67 (1.07-2.60)	1.50 (1.24-1.82)
Patient-related stress	0.86 (0.51-1.45)	1.65 (1.29-2.11)	0.98 (0.56-1.72)	1.80 (1.37-2.36)
Stresses related to teamwork	1.12 (0.71-1.76)	2.00 (1.57-2.55)	1.09 (0.68-1.76)	1.99 (1.49-2.45)

^a Adjusted for age, gender, specialisation status, on-call duty, employment agreement and intention to emigrate

* Not shown in the sub-studies

7. Discussion

The present study was a comparative study of the psychosocial work environment of physicians and its impact on work-related wellbeing and the intention to leave one's job. GPs were compared to medical specialists and private physicians in this respect. Particular attention was paid to the foreign-born physicians' employment, work-related wellbeing and future career plans. Foreign-born GPs were compared to other foreign-born physicians and to Finnish GPs. The data used came from a questionnaire circulated among Finnish and foreign-born physicians and qualitative theme interviews with foreign-born GPs resident in Finland.

Principal findings

1. Finnish GPs reported lower work ability and self-rated health than physicians working in specialised medical care or the private sector. Public-sector physicians (GPs and medical specialists) reported more psychological distress than physicians working in the private sector. Wellbeing differences among physicians working in different health sectors were partly explained by higher stressors among physicians working in primary and specialised medical care.
2. The entry of foreign-born physicians to their profession in Finland was experienced as prolonged and challenging due to a difficult licensing process. Insufficient information regarding the process, lack of support with language studies and test requirements that were experienced as unfair were the key licensing issues among foreign-born physicians. The licensing process was more challenging for foreign-born physicians from non-EU/EEA countries.

3. After obtaining a medical license and gaining employment, foreign-born public sector physicians (GPs and medical specialists) encountered work-related problems similar to those reported by native physicians, such as heavy job demands, poor professional support, and frustration with electronic patient record systems. Patient-related stress was higher among foreign-born GPs than among foreign-born medical specialists and private physicians.
4. GPs (both Finnish and foreign-born) had a higher intention to leave their job than psychosocial working in other health care sectors. Foreign-born GPs had a higher intention to leave their job than Finnish GPs. Psychological stressors explained the intention to leave particularly among Finnish GPs.

7.1 Psychosocial work stressors partly explain the lower wellbeing at work among Finnish GPs in comparison with other Finnish physicians

No differences emerged in psychological distress between GPs and medical specialists, but a relatively high difference emerged in work ability and self-rated health between these groups. Private physicians reported more positive work-related wellbeing than physicians working in the public-sector. These findings suggest that working in public health care may strain physicians more than working in the private sector. On the basis of these findings, we cannot assume that long-term psychological distress increases health problems that may cause decline in physicians' work ability.

The present study demonstrated that differences in wellbeing among physicians are partly explained by higher stressors among public-sector physicians. There were also variations between stressors and wellbeing indicators in different health care sectors.

The study suggests that high job demands and stresses related to role ambiguity are associated with all the wellbeing indicators examined. This may suggest that such stressors increase psychological distress and decrease work ability and self-rated health among GPs. These findings agree with previous studies that have suggested that job demands increase psychological distress among GPs (Vanagas & Bihari-Axelsson 2005). Also, role ambiguity has been shown to lead to higher anticipation of burnout among GPs (Kushnir et al. 2004). Moreover, in the present study patient-related stress accounted for the differences in work ability and self-rated health between GPs and other physicians. Hence, patient-related stress may potentially play a role in the processes leading to lower work ability and worse self-rated health among GPs. The previous studies indicated that challenging patients, such as patients with unmet expectations and depressive disorders, tend to increase stress and reduce wellbeing particularly for GPs (Lynch et al. 2007; Kroenke 1996; Jackson & Kroenke 1999; Krebs et al. 2006; Noyes et al. 1995).

The present study also found that stresses related to team work in primary health care and specialised medical care were associated with elevated psychological distress and decreased work ability. Stress related to electronic patient record systems was also associated with decreased work ability in these groups. It has been shown in previous studies that stresses related to teamwork have a mediating role in decreased wellbeing among physicians (Nieuwenhuijsen et al. 2010). In previous Finnish studies, problems with electronic patient record systems have been found to stress medical specialists in particular (Heponiemi et al. 2012; Winblad et al. 2010; Vänskä & Kangas 2008).

7.2 Foreign-born physicians entering the profession in Finland – a challenging licensing process

The present study revealed that the nature of the licensing process and its negative aspects is an obstacle to foreign-born physicians gaining

access to employment in Finland. Similar difficulties have been experienced in Canada with the licensing of physicians trained abroad (Audas et al. 2005; Audas et al. 2009).

In the worst cases, the licensing and employment process could take more than 10 years, which obviously represents a waste of highly trained resources. According to Haukilahti (2012), only one out of five non-EU/EEA physicians who took the licensing examination in Finland between 1994 and 2009 passed the examination on their first attempt (Haukilahti et al. 2012). A previous Finnish study showed that unemployment among foreign-born physicians is higher than among their Finnish colleagues (Aalto et al. 2013). It is obvious that the challenging licensing process is one of the factors explaining unemployment particularly among non-EU/EEA physicians such as Russian-speaking physicians. According to the previous Finnish study, Russian migrants have been shown to be at a high risk of social exclusion due to their high unemployment rates (Mannila Reuter 2009). From the Finnish perspective, it has been suggested that the low pass rate of foreign-born physicians is due to inadequate preparation for the examination (Markkanen, 2008).

European countries are actively seeking skilled migrants (McKee 2008) to work in areas facing a labour shortage such as primary health care. Nevertheless, as the present study shows, even highly skilled migrants such as physicians face substantial challenges in adapting to and gaining access to the Finnish health care system as trained professionals. Within Europe, the qualifications of physicians trained in the EU/EEA are recognised by EU Directive, but there are no consistent practices in place for physicians trained outside the EU/EEA (OECD 2007). The present study indicates that the main challenges in the licensing process are the poor quality of information concerning the test requirements and inadequate support with language courses. These challenges effectively prohibit or inhibit the integration of foreign-born GPs in the Finnish health care system, particularly of those trained outside the EU/EEA. A secondary consequence may be that the lack of information not only

excludes foreign-born physicians from the health care sector but also promotes segregation within the professional community itself.

7.3 Job satisfaction is lower and reported stressors are higher among foreign-born public-sector physicians than among their peers in the private sector

It was found in the present study that after acquiring a license to practise as a GP and finding employment, foreign-born physicians seemed to be relatively satisfied and highly involved with their work. However, job satisfaction and job involvement was lower among foreign-born public-sector physicians (GPs and medical specialists) than among foreign-born private physicians. The results of the present study agree with those of an earlier study conducted in the USA that demonstrated that foreign-born GPs are less satisfied with primary health care work than native GPs (Chen et al. 2012).

It was found in the present study that foreign-born public-sector physicians experienced more job demands, stresses related to teamwork and frustration with electronic patient record systems than private physicians. These stressors have often shown to be associated with various health problems and negative performance among native public-sector physicians (Heponiemi et al. 2012; Winblad et al. 2010; Vänskä & Kangas 2008; Kivimäki et al. 2007).

Patient-related stress was significantly higher among foreign-born GPs than among foreign-born medical specialists and private physicians. According to the interviews conducted, patients with multiple sicknesses, mental health problems and consumer-type attitudes to health care services were experienced to be the most challenging. It has also been suggested in previous studies that these patient groups cause stress among native physicians (Lynch et al. 2007; Krebs et al. 2006; Kroenke 1996; Jackson & Kroenke 1999). An earlier Finnish study on public attitudes and opinions in Finland showed that the most racist attitudes among Finns

are held by unemployed and uneducated men, who can only afford public health care services (Jaakkola 2009). Thus, foreign-born GPs may encounter racism in primary health care even during patient appointments. Experiences of racism, of being untrustworthy and of feeling not equally competent with native colleagues cause stress and affect physical and mental health (Anderson 2013; Harris et al. 2006).

The present study showed that comprehensive work orientation and professional support are highly valued among foreign-born physicians but not always experienced in practice in the workplace. Isolation and lack of appropriate support in the workplace and the stress of being an ‘outsider’ have been previously reported by foreign-born physicians (Chen et al. 2011; Morris et al. 2006; Cole-Kelly 1994). Earlier studies in the USA found that African-American medical students encounter a higher level of stress because of insensitive treatment (Strayhorn 1980a; Strayhorn 1980b). In an earlier Finnish study, it was found that foreign-born physicians received very little positive feedback for their work from the general population (Haukilahti 2012). A qualitative study in Norway noted that foreign-born GPs experience that they have to work harder and be more careful than their native colleagues in order to avoid patient complaints (Diaz & Hjorleifsson 2011). These factors may have increased psychosocial stressors and decreased job satisfaction among foreign-born physicians.

In the present study, it was found that half of the foreign-born GPs had an ‘active’ job when analysed against the combined measure for ‘job strain’ typology according to Karasek’s Demand Control Model (1979). Foreign-born GPs were more likely to have an ‘active’ job than other foreign-born physicians. In the job strain model, an ‘active’ job is associated with positive outcomes such as learning new skills, coping with challenges and developing new abilities. In a study conducted in Norway, it was found that low job control was a predictor of job stress for Indian physicians but not for their Norwegian peers (Pal & Saksvik 2008).

These results may be partially explained by cultural diversity in the perception of job control. It may be that job control is not important for foreign-born physicians. It may also be that there are real cultural differences in observation and experience in the level of job control.

7.4 Both Finnish and foreign-born GPs have a high intention to leave primary health care

It was found in the present study that the intention to leave one's job is higher among both Finnish and foreign-born GPs than among physicians working in other health care sectors. Foreign-born GPs had an even higher intention to leave their job than Finnish GPs. Previous studies have consistently showed that physicians in primary health care have a higher intention to leave their job than other physicians (Gardiner et al. 2005; McComb 2008; Hann et al. 2011; Kankaanranta et al. 2007; Peterson et al. 2011; Rodwell et al. 2009; Linzer et al. 2009). Foreign-born GPs in Canada have been at a higher risk to leave primary health care than Canadian GPs (Audas et al. 2009a).

Higher job demands and poor professional support were associated with a higher intention to leave one's job among both foreign-born GPs and Finnish GPs. The results of the present study agree with previous studies that have demonstrated that high job demands increase the intention to leave one's job among physicians (McComb 2008). Poor professional support has been previously associated with lower job satisfaction (Joyce 2003). High job demands and poor professional support are dimensions in the Karasek JDC-S model, and the results of the present study agree with previous studies performed for other occupations among native employees (Hyrkas & Dende 2009; Karasek et al. 1981; Kinman & Jones 2008; Rodríguez et al. 2001). However, low job control was associated with a higher intention to leave one's job only among Finnish GPs. The fact that a majority (81%) of foreign-born GPs experienced high job control may explain the non-significant results in relation to job control and the intention to leave one's job among foreign-born GPs.

The present study suggests that younger physicians are more likely to have an intention to leave their job. It was reported in a previous Finnish study that GPs were more likely to express an intention to move from primary health care to the private sector (Kankaanranta et al. 2006). This may be due to the fact that physicians may have better opportunities to determine their work schedules in the private sector, thus increasing job control. In addition in a previous Finnish suggested that younger physicians have multifaceted expectations of work and workplace (Hietamäki 2013). This may indicate that younger GPs intention to leave might partially be induced by conflict between their expectations and everyday routines in health centres.

The study revealed that, in addition to low job control, high levels of patient-related stress and high stresses related to teamwork were associated with a higher intention to leave one's job among Finnish GPs but not among foreign-born GPs. The fact that the association between these stressors and intention to leave was robust only among Finnish physicians raises two interesting further questions regarding foreign-born physicians: 1) Why are there such differences in the perceived psychosocial work environment regarding the intention to leave among foreign-born GPs and Finnish GPs? and 2) What are the factors behind the high intention to leave one's job among foreign-born GPs?

Cross-cultural differences among physicians in respect of perception of stress as well as of related coping mechanisms may exist. Earlier studies support this assumption by showing that German physicians expressed higher job demands than their Australian counterparts. However, there were no differences in coping strategies between these groups (Mache 2012). Another study showed that British GPs experienced less job satisfaction, poorer mental health and significantly greater pressure at work than did their Canadian colleagues (Rout & Rout 1997). These studies compared the job stress of physicians between two countries. Some of the observed variations may thus be explained by the differences in the health care service environment between those countries.

There may also be cultural differences in respect of how persons express or report stress. Changing jobs is seen as more challenging by foreign-born GPs than by Finnish GPs mainly because of two factors: 1) it is more difficult for them to find employment in an unfamiliar culture than for native GPs, and 2) they tend to have less extensive professional networks. Both factors limit their opportunities for changing jobs and may be factors contributing to the lower level of experienced psychosocial job stress and stronger coping mechanisms among foreign-born physicians. The intention to leave one's job also depends on perceived opportunities at the organisational and labour market level (Mano-Negrin 2001). Previous evidence shows that limited status mobility and also status loss is a common experience for migrants (Shuval & Bernstein 1996; Shuval 2000; Ayman & Berry 1996).

7.5 Current challenges in primary health care regarding Finnish and foreign-born GPs

The present study suggests that the retention of both Finnish and foreign-born GPs will likely remain challenging because of the high level of intention to leave one's job among GPs. Patient-related stress seemed to be very high among both Finnish and foreign-born GPs, while job demands irritated Finnish GPs and foreign-born public-sector GPs and medical specialists in particular. There are probably many factors that explain high stressors among GPs, but one factor is probably the overall development of the Finnish health care system in the last few decades. Occupational health care and the providing of outpatient services by the private sector has been increasing since the 1990s. Patients can choose between occupational care, private health care or primary health care; however, occupational health care only caters to employed persons, and in the private sector the substantial fees may be a barrier to patients in low-income groups. Thus, it is mostly families with children, the elderly and the unemployed who are treated in public primary health care. These patient groups cover patients of all ages and require care ranging from preventive health to the management of chronic diseases. The wide variety of patients in primary health care may contribute to patient-related stress among GPs.

Moreover, between 2000 and 2010 the number of outpatient visits to physicians in primary health care decreased by nearly 200,000 per year, while other primary health care visits (visits to nurses, for instance) increased by about 4 million per year (THL 2010). These trends have probably increased patient-related stress and job demands among GPs due to the huge increase in patient admissions in primary health care. These developments may have also increased role ambiguity stress because of the increased duties of nurses in what used to be GP consultations. In the present study, role ambiguity was found to decrease wellbeing among Finnish GPs.

Moreover, because specialised medical care has become more expensive for municipalities, for cost-efficiency reasons some long-term care and other treatments were reallocated from specialised medical care to primary health care (Mattila 2011; Schrijvers 2005). Despite increased job demands, available resources in primary health care have increased more slowly than resources in specialised medical care. Between 1995 and 2000, health care expenditure increased by 2.6% in real terms, specialised medical care accounting for 2.5% per year and primary health care for only 1.5% per year (THL 2011). Completely new tasks have also been assigned to primary health care, including giving GPs the responsibility for issuing a statement on whether a person applying for a weapons permit for their first hand gun is suitable to be issued a permit. Such changes have introduced a considerable number of new administrative tasks to the workload of GPs. The job profile of a GP has thus changed considerably, and the division of duties between GPs and other personnel at health centres has been in a constant state of flux.

It was also found in the present study that problems with electronic patient record systems were associated with decreased wellbeing and job satisfaction among GPs and medical specialists. Electronic patient record systems were introduced in Finland in the 1990s, yet there are still multiple different systems in use. They have limited interoperability and as a result are often criticised as cumbersome and felt to be difficult in everyday use.

In addition to findings in the present study, there are several other factors which may have adversely affected the attractiveness of primary health care work. Medical training given within a high-tech framework at university hospitals has been shown to make medical students less interested in primary health care (Hyppölä et al. 2000). Appreciation of primary health care has decreased among the general population as well as in the medical profession. According to an earlier Finnish study, even health centre directors did not find primary health care an attractive career choice (Lammintakanen et al. 2010). Moreover, becoming a GP is seen in Finnish health care not as a career in its own right but rather as a stepping stone to specialised medical care.

7.6 Towards an attractive workplace for GPs

The present study suggests that work-related stressors among GPs is high and that GP retention is challenging because GPs often expressed an intention to leave primary health care. To be able to recruit and retain physicians in primary health care, it is crucial to make primary health care a more attractive workplace. The present study suggests that improving the GPs' psychosocial environment could lower job stress, which may make it more likely that GPs (both foreign-born and Finnish) will stay in primary health care. For instance, investing in professional support particularly among young and foreign-born GPs, specifically dividing tasks between GPs and nurses and other health care professionals in more detail and encouraging teamwork could make the job of GPs easier. Effective solutions are often context-related, and thus priority should be given to the local and organisational level. The electronic patient record systems should finally be unified and made simpler for everyday use. This would actually benefit physicians in all health care sectors.

Job demands and patient-related stress seemed to be high among both foreign-born and Finnish GPs. One reason for this is the increased workload in relation to available resources. A clear nationwide definition of the health care service chain, including for instance the demarcation between primary health care and specialised medical care, should be addressed.

In respect of foreign-born physicians, the present study brought forth the challenge that the Finnish health care system does not enable efficient utilisation of foreign-born physicians already resident in Finland. Alternative career and qualification paths and better coordinated support practices for foreign-born physicians should be considered. Easy access to training and language courses, for instance, may make it easier for foreign-born physicians to integrate into the Finnish health care system. This could be implemented in workplaces such as health centres. Increasing knowledge at different levels (among officials at employment offices, chief physicians at health centres, and so on) of qualification requirements and recruitment practices could make the integration of foreign-born physicians simpler.

7.7 Methodological consideration

The present study used survey data from Finnish and foreign-born physicians and qualitative theme interviews with foreign-born GPs who live and work in Finland in a representative sample of a large and geographically distributed population that also had a broad age range. The Finnish survey sample was representative of the eligible population in terms of age and employment area (Elovainio et al. 2007). The response rate among foreign-born physicians was relatively low (42%), and employed and female foreign-born physicians were over-represented among foreign-born physicians (Aalto et al. 2013). Moreover, cultural and personal factors such as country-specific differences and different life stories among foreign-born physicians were not gauged in the survey. However, it was possible in the present study to examine variation in psychosocial factors among foreign-born physicians in a country of destination and also to compare foreign-born physicians' jobs in various health care sectors. The fact that the study was conducted in one country means that the findings are valid only in the Finnish context. The study was a cross-sectional study, i.e. a snapshot of the situation at a certain moment, and thus does not allow causal interpretations of the associations between the physicians' work environment and wellbeing on the one hand and their intention to leave their job on the other.

Because self-reported data were used in the present study, the findings may be either diminished or over-inflated; we aimed to compensate for this by using established measures that have proven reliability. In addition, the present study included measures that are specific to the work of physicians in order to discover new perspectives for stress-related factors among physicians. Karasek's original scales of Job Demands (Karasek 1985) and Social Support (Karasek & Theorell 1990) were not used, because the original scales were not included in the questionnaire. While the original scales might have been favourable, short versions were used to ensure a better response rate among the physicians surveyed. It is also expected that the short versions of the scales correlate with the original scales because these measurements partly cover the original scales (Fransson et al. 2012). The short versions have previously been used to measure job demands and professional support among health care employees (Heponiemi et al. 2012).

The qualitative data were based on a relatively small number of interviews; however, we were able to compare the interview results with the survey results of foreign-born physicians working in Finnish health care. The interviews were conducted in Finnish, which was not the interviewees' native language. Although the respondents spoke good Finnish, we should note that some personal experiences may be easier to discuss in one's native language. Moreover, we are reporting the findings in English, and some distortion may have occurred in the translation process. To minimise this risk, we have used an experienced translator to translate the interviewees' statements.

Finally, the present study focused mainly on work-related psychosocial factors. It should be remembered that experiences of physicians' work environment stress and their wellbeing and performance are complex and multifaceted issues. They are also influenced by many other factors, such as personal, professional and other organisational aspects.

8. Conclusion

The present study yielded new information on differences in wellbeing among physicians in various health care sectors and in the career possibilities and wellbeing at work of foreign-born physicians.

The results showed that GPs (both Finnish and foreign-born) had a higher intention to leave their job than other physicians. Finnish public-sector physicians reported more problems with wellbeing than private physicians. Wellbeing differences were partly explained by different psychosocial stressors. Job demands and patient-related stress were both strong stressors among GPs, whereas stresses related to team work and patient information systems seemed to be the most severe stressors among medical specialists.

The key finding regarding foreign-born physicians was that the licensing process was considered to be exclusive of and unfair to foreign-born physicians licensed outside the EU/EEA, delaying their access to employment. One way to avoid these problems would be simply to make it easier for foreign-born physicians to gain access to training and language courses, specifically regarding medical work. Once foreign-born physicians had obtained a license and found employment in Finland, foreign-born public sector physicians in particular seemed to face problems similar to those reported by native physicians, such as high job demands, stresses related to teamwork and frustration with electronic patient record systems. The findings also showed that GPs (both Finnish and foreign-born) have a higher intention to leave their job than other physicians, suggesting that GPs retention may remain a challenge in the future too. However, the intention to leave among Finnish GPs in particular was explained by psychosocial stressors. It would be worth investigating what factors underlie the high intention to leave one's job among foreign-born GPs. From the perspective of primary health care, paying more attention to efficient human resource policy could make primary health care a more attractive workplace for both Finnish and foreign-born GPs.

Acknowledgments

This study was conducted in a research group working at the Service system research unit at the National Institute for Health and Welfare (THL). It was partly financed by the Academy of Finland and the Finnish Work Environment Fund. The author received further financial support from Doctoral Programs in Public Health (DPPH). I wish to acknowledge all the senior researchers who contributed to applications for grants and research project funds to enable my work. My sincere thanks are due to Professor Marko Elovainio, Professor Elina Hemminki, Docent Anna-Mari Aalto, Dr. Meri Larivaara, Docent Tarja Heponiemi and Docent Timo Sinervo. I would also like to thank Assistant Director General Marina Erhola and Head of Department Markku Pekurinen for providing a great infrastructure and an intellectually inspiring research environment for me during my four-year journey towards a Ph.D. degree.

This study would not have been possible without the valuable guidance and constructive comments of several experts. First of all, I would like to express my gratitude to my supervisor, Professor Marko Elovainio, for his contribution in planning the study and his knowledgeable remarks on my manuscripts. I wish to thank Docent Tarja Heponiemi for her patient guidance and valuable advice in statistical questions concerning my study. My boss, Docent Anna-Mari Aalto, has always had time for me whenever I needed it. Her help and understanding particularly towards the end of this project was very important. In the qualitative parts of my studies, Dr. Riikka Lämsä and Docent Kristiina Manderbacka shared their methodological knowledge with me, which I truly appreciate. Thanks are likewise due to Docent Timo Sinervo, who always found the right reference for me in his bookshelf. I am deeply indebted to Professor Ilmo Keskimäki for his faith in my skills as a researcher and feel privileged that he was always willing to share his expertise and wisdom with me. Our research team enjoyed an excellent collaboration with the Finnish Medical Association. I would like to thank Research Chief Jukka

Vänskä and Researcher Juho Ruskoaho for their help and collaboration on the study concerning foreign-born physicians.

I would like to express my sincere appreciation to Professor Eero La-helma from the Hjelt Institute who always asked the right questions at the right time. I am most thankful to the reviewers of this thesis, Docent Tea Lallukka and Docent Simo Mannila, for their creative comments and valuable criticism of my work, and also for accepting the assignment and reviewing this lengthy paper in due time. My colleagues Laura Pekka-rinen, Sonja Lumme, Martti Arffman, Tuulikki Vehko, Vesa Syrjä, Rei-jo Sund, Riikka Lämsä and Tuula Fageström have my thanks for sharing open-minded discussions during lunch and coffee breaks. Your friend-ship and support made the good days better and the bad days manageable.

Beyond my working life, there are several people I want to men-tion and thank. My mother and father gave me a strong and healthy foun-dation for my life and supported me through the years. I also thank my mother-in-law and father-in-law for taking good care of my children dur-ing my travels. My sister Minna and I lost ourselves in the forest with our dogs several times on long walks that gave me energy and kept me in good shape. My sister Annukka saved me a lot of time with her ‘fam-ily practice’. I have lost track of how many phone calls I made to her for medical consulting for myself or my children. I miss you ‘Kokkola la-dies’ and the good times with you. You know who you are and I am proud to be one of you.

My daughter Saaga and sons Leevi and Lauri give me so much hap-piness and joy. The world is simply a much better place with you in it! I encourage you to follow your dreams whatever they are or will be. Last but not least, my deepest thanks go to my husband Marko. No matter how many kilometres or time zones were between us, you always sup-ported me and believed in me. Your laughter, your love and your intel-ligence gave me the strength I needed to continue. I would not be here without you.

References

- Aalto, A-M., Elovainio, M., Heponiemi, T., Hietapakka, L., Kuusio, H., & Lämsä R (2013). Ulkomaalaistaustaiset lääkärin ja hoitajat suomalaisessa terveydenhuollossa. Haasteet ja mahdollisuudet. Raportteja (7/2013). (in Finnish). Juvenes Print, Suomen Yliopistopaino Oy, Tampere. Terveyden ja hyvinvoinnin laitos, Helsinki.
- Aira, M., Mäntyselkä, P., Vehviläinen, A., & Kumpusalo, E (2010). Occupational isolation among general practitioners in Finland. *Occupational Medicine* (Oxford), 60(6), 430-435.
- Allen, J., & Meyer, I (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology*, 91(1), 1-18.
- Anderson, K (2013). Diagnosing discrimination: Stress from perceived racism and the mental and physical health effects diagnosing discrimination: Stress from perceived racism and the mental and physical health effects. *Sociological Inquiry*, 83(1), 55-81.
- Audas, R., Ryan, A., & Vardy, D (2009). Where did the doctors go? A study of retention and migration of provisionally licensed international medical graduates practising in Newfoundland and Labrador between 1995 and 2006. *Canadian Journal of Rural Medicine : The Official Journal of the Society of Rural Physicians of Canada = Journal Canadien De La Medecine Rurale: Le Journal Officiel De La Societe De Medecine Rurale Du Canada*, 14(1), 21-24.
- Audas, R., Ross, A., & Vardy, D (2005). The use of provisionally licensed international medical graduates in Canada. *CMAJ: Canadian Medical Association Journal = Journal De l'Association Medicale Canadienne*, 173(11), 1315-1316.
- Aycan, Z., & Berry, J (1996). Impact of employment-related experiences on immigrants' psychological well-being and adaptation to Canada. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, 28(3).
- Baer, L., Ricketts, T., Konrad, T., & Mick S (1998). Do international medical graduates reduce rural physician shortages? *Medical Care*, 36(11), 1534-1544.
- Baron, R., & Kenny, D (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Battersby, S., & Thomson, A (1997). Community midwives' and general practitioners' perspectives, of antenatal care in the community. *Midwifery*, 13(2), 92-99.
- Bond, F., Flaxman, P. E., & Bunce, D (2008). The influence of psychological flexibility on work redesign: Mediated moderation of a work reorganization intervention. *The Journal of Applied Psychology*, 93(3), 645-654.
- Bond, F., & Bunce, D (2001). Job control mediates change in a work reorganization intervention for stress reduction. *Journal of Occupational Health Psychology*, 6(4), 290-302.
- Boran, A., Shawaheen, M., Khader, Y., Amarin, Z., & Hill Rice, V (2012). Work-related stress among health professionals in Northern Jordan. *Occupational Medicine* (Oxford), 62(2), 145-147.
- Bovier, P., Arigoni, F., Schneider, M., & Gallacchi, M (2009). Relationships between work satisfaction, emotional exhaustion and mental health among Swiss primary care physicians. *European Journal of Public Health*, 19(6), 611-617.
- Branson, R., & Armstrong, D (2004). General practitioners' perceptions of sharing workload in group practices: Qualitative study. *British Medical Journal*, 329(7462), 381.
- Calnan, M., Wainwright, D., Forsythe, M., Wall, B., & Almond, S (2001). Mental health and stress in the workplace: The case of general practice in the UK. *Social Science & Medicine*, 52(4), 499-507.
- Calnan, M., Wainwright, D., Forsythe, M., & Wall, B (2000). General practice. All stressed up and nowhere to go? *Health Service Journal*, 110(5709), 28-29.
- Carr, J., Armstrong, S., Hancock, B., & Bethea, J (2002). GPs' perceptions of the nurse practitioner role in primary care. *British Journal of Community Nursing*, 7(8), 408-413.
- Chen, P., Curry, A., Nunez-Smith, M., Bradley, E., & Desai, M (2012). Career satisfaction in primary care: A comparison of international and US medical graduates. *Journal of General Internal Medicine*, 27(2), 147-152.

- Chen, P., Curry, L., Bernheim, S., Berg, D., Gozu, A., & Nunez-Smith, M (2011). Professional challenges of non-U.S.-born international medical graduates and recommendations for support during residency training. *Academic Medicine: Journal of the Association of American Medical Colleges*, 86(11), 1383-1388.
- Cole-Kelly, K (1994). Cultures engaging cultures: International medical graduates training in the United States. *Family Medicine*, 26(10), 618-624.
- Diaz, E., & Hjorleifsson, S (2011). Immigrant general practitioners in Norway: A special resource? A qualitative study. *Scandinavian Journal of Public Health*, 39(3), 239-244.
- Elovainio, M., Salo, P., Jokela, M., Heponiemi, T., Linna, A., Virtanen, M. et al. (2013). Psychosocial factors and well-being among Finnish GPs and specialists: A 10-year follow-up. *Occupational and Environmental Medicine*, 70(4), 246-251.
- Elovainio, M., Kuusio, H., Aalto, A-M., Sinervo, T., & Heponiemi, T (2010). Insecurity and shiftwork as characteristics of negative work environment: Psychosocial and behavioural mediators. *Journal of Advanced Nursing*, 66(5), 1080-1091.
- Elovainio, M., Heponiemi, T., Vänskä, J., Sinervo, T., Kujala, S., Laakso, E. et al. (2007). Miten suomalainen lääkäri voi 2000-luvulla? (in Finnish). *Suomen lääkärilehti* 62(20-21), 2071-2076.
- Elovainio, M., Forma, P., Kivimäki, M., Sinervo, T., Sutinen, R., & Laine, M (2005). Job demands and job control as correlates of early retirement thoughts in Finnish social and health care employees. *Work & Stress*, 19(1), 84-92.
- Elovainio, M., & Kivimäki, M (1998). Work and strain on physicians in Finland. *Scandinavian Journal of Social Medicine*, 26(1), 26-33.
- Eronen, A., Londén, P., Perälähti, A., Siltaniemi, A., & Särkelä, R (2007). Sosiaalibarometri 2007: Ajankohtainen arvio kansalaisten hyvinvoinnista, palveluista ja palvelujärjestelmän muutoksesta. (in Finnish). Helsinki: Sosiaali- ja Terveysturvan Keskusliitto Ry.
- European Commission (2012). COMMISSION STAFF WORKING DOCUMENT on an action plan for the EU health workforce. in http://ec.europa.eu/dgs/health_consumer/docs/swd_ap_eu_healthcare_workforce_en.pdf(Access: 20130415) Strasbourg, 18.4.2012.
- Forcier, M., Simoons, S., & Giuffrida, A (2004). Impact, regulation and health policy implications of physician migration in OECD countries. *Human Resources for Health*, 2:12-11.
- Fransson, E., Nyberg, S., Heikkilä, K., Alfredsson, L., Bacquer de, D., Batty, G., et al (2012). Comparison of alternative versions of the job demand-control scales in 17 European cohort studies: the IPD-Work consortium. *BMC Public Health*, 1(20), 12:62.
- Garces-Ozanne, A., Yow, A., & Audas, R (2011). Rural practice and retention in New Zealand: An examination of New Zealand-trained and foreign-trained doctors. *The New Zealand Medical Journal*, 124(1330), 14-23.
- Gardiner, M., Sexton, R., Durbridge, M., & Garrard, K (2005). The role of psychological well-being in retaining rural general practitioners. *The Australian Journal of Rural Health*, 13(3), 149-155.
- Goldberg, D., Gater, R., Sartorius, N., Ustun, T., Piccinelli, M., Gureje, O. et al. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27(1), 191-197.
- Government Immigration Policy Programme (2006). Hallituksen maahanmuuttopoliittinen ohjelma. (in Finnish). in http://www.mol.fi/mol/fi/99_pdf/fi/06_tyoministerio/06_julkaisut/10_muut/mamu_ohjelma19102006.pdf
- Hann, M., Reeves, D., & Sibbald, B (2011). Relationships between job satisfaction, intentions to leave family practice and actually leaving among family physicians in England. *European Journal of Public Health*, 21(4), 499-503.
- Hardy, M., Conway, E (Ed.) (1988). Role theory: perspectives for health professionals. Appleton & Lange.
- Harris, P (1989). The nurse stress index. *Work & Stress*, 3(4), 335-346.
- Harris, M., Proudfoot, J., Jayasinghe, U., Holton C., Powell, G., Davies, G., Amoroso, C. et al. (2007). Job satisfaction of staff and the team environment in Australian general practice. *The Medical Journal of Australia*, 186(11), 570-573.
- Harris, R., Tobias, M., Jeffreys, M., Waldegrave, K., Karlsen, S., & Nazroo, J (2006). Racism and health: The relationship between experience of racial

- discrimination and health in New Zealand. *Social Science & Medicine*, 63(6), 1428-1441.
- Haukilahti, R., Virjo, I., & Mattila, K (2012). Success in licensing examinations of doctors from outside the European economic area: Experiences from Finland 1994-2009. *Education for Primary Care: An Official Publication of the Association of Course Organisers, National Association of GP Tutors, World Organisation of Family Doctors*, 23(5), 342-349.
- Haukilahti, R., Virjo, I., Heikkilä, T., Hyppölä, H., Kujala, S., et al. (2012). Lääkärien kokema työnsä arvostus: Onko eroa Suomessa ja ETA-alueen ulkopuolella koulutettujen välillä? (in Finnish). *Suomen Lääkärilehti*, 67(22), 1749-1954.
- Hellgren, J., Baraldi, S., Falkenberg, H., Sverke, M (2006). Bäst arbetsklimat på sjukhus som bolagiserats eller privatiserats. läkares upplevelser av att arbeta i olika driftsformer [Best working climate in private or investor-owned hospitals. physicians' experiences with different management forms]. *Läkartidningen*, 11,2040-4.
- Heponiemi, T., Vänskä, J., Aalto, A-M., & Elovainio, M (2012). Kyselyt lääkäreille 2006 ja 2010: potilastyöhön ja tietojärjestelmiin liittyvä stressi lisääntyi. (in Finnish). *Suomen Lääkärilehti*, 47(67), 3491-3495.
- Heponiemi, T., Kuusio, H., Sinervo, T., & Elovainio, M (2010). Job attitudes and well-being among public vs. private physicians: Organizational justice and job control as mediators. *European Journal of Public Health*, 21(4), 520-5.
- Hietamäki, M (2013). Elämänvaihelähtöinen henkilöstövoimavarojen johtaminen tutkimus lääkäreiden ja sairaanhoitajien työ- ja organisaatiositoutumisesta. (in Finnish). University of Eastern Finland. Faculty of Social Sciences and Business. Doctoral Dissertation.
- Hyppölä, H., Kumpusalo, E., Virjo, I., Mattila, K., Neittaanmäki, L., Halila, H. et al. (2000). Evaluation of undergraduate medical education in Finnish community-oriented and traditional medical faculties: A 10-year follow-up. *Medical Education*, 34(12), 1016-1018.
- Hyrkäs, K., & Dende, D (2009). Perspectives on nursing job satisfaction, the work environment and burnout. *Journal of Nursing Management*, 17, 267-268.
- Häkkinen, U (2005). The impact of changes in Finland's health care system. *Health Economics*, 14 (Suppl 1), S101-18.
- Idler, E., & Benyamini, Y (1997). Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior*, 38(1), 21-37.
- Ilmarinen, J., Tuomi, K., & Klockars, M (1997). Changes in the work ability of active employees over an 11-year period. *Scandinavian Journal of Work, Environment & Health*, 23(1), 49-57.
- Jaakkola, M (Ed.) (2009). Maahanmuuttajat suomalaisten näkökulmasta: Asennemuutokset 1987-2007. Helsingin kaupungin tietokeskus.
- Jackson, J., Kroenke, K (1999). Difficult patient encounters in the ambulatory clinic: Clinical predictors and outcomes. *Arch Intern Med*. 24;159(10), 1069-75.
- Joyce, C., Veitch, C., Crossland, L (2003). Professional and social support networks of rural general practitioners. *Australian Journal of Rural Health*, 11(1), 7-14.
- Kankaanranta, T., Nummi, T., Vainiomäki, J., Halila, H., Hyppölä, H., Isokoski, M. et al. (2007). The role of job satisfaction, job dissatisfaction and demographic factors on physicians' intentions to switch work sector from public to private. *Health Policy (Amsterdam, Netherlands)*, 83(1), 50-64.
- Kankaanranta, T., Vainiomäki, J., Autio, V., Halila, H., Hyppölä, H., Isokoski, M. et al. (2006). Factors associated with physicians' choice of working sector: A national longitudinal survey in Finland. *Applied Health Economics & Health Policy*, 5(2), 125-136.
- Karasek, R., & Theorell, T (1990). *Health, work, stress, productivity, and the reconstruction of working life*. Basic Books, New York.
- Karasek, R (Ed.) (1985). *Job content questionnaire and user's guide*. Lowell, MA: Department of Work Environment, University of Massachusetts, 1985.
- Karasek, R., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T (1981). Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men. *American Journal of Public Health*, 71(7), 694-705.
- Karasek, R (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24(2), 285-308.

- Keskimäki, I (1997). Social equity in the use of hospital inpatient care in Finland. STAKES, National Research and Development Centre for Welfare and Health. Doctoral Dissertation.
- Kinman, G., & Jones, F (2008). Effort-reward imbalance and over commitment: Predicting strain in academic employees in the United Kingdom. *International Journal of Stress Management*, 15(4), 381-395.
- Kivimäki, M., Vanhala, A., Pentti, J., Länsisalmi, H., Virtanen, M., Elovainio, M. et al. (2007). Team climate, intention to leave and turnover among hospital employees: Prospective cohort study. *BMC Health Services Research*, 7, 170-8.
- Kivimäki, M., Sutinen, R., Elovainio, M., Vahtera, J., Räsänen, K., Töyry, S. et al. (2001). Sickness absence in hospital physicians: 2 year follow up study on determinants. *Occupational and Environmental Medicine*, 58(6), 361-366.
- Kivimäki, M., & Elovainio, M (1999). A short version of the team climate inventory: Development and psychometric properties. *Journal of Occupational & Organizational Psychology*, 72(2), 241-246.
- Kivimäki, M., & Lindstrom, K (1992). Job stress and well-being of care providers: Development of a standardized survey instrument. 4(3), 115-124.
- Kokko, S., Peltonen, E., & Honkanen, V (Eds.) (2009). Perusterveydenhuollon kehittämisen suuntaviivoja. Raportti perusterveydenhuollon vahvistamistoimien suunnittelutyöstä. (in Finnish). Valopaino Oy, Helsinki: Terveiden ja hyvinvoinnin laitos, Helsinki.
- Kokko, S., & Nyfors, H. Finnish experiences of services to communities with declining and ageing populations. ec.europa.eu/social/BlobServlet?docId=8328&langId=en (access: 20130415)
- Konrad, T., Williams, E., Linzer, M., McMurray, J., Pathman, D., Gerrity, M., Schwartz, M., Scheckler, W., Van Kirk, J., Rhodes, E., Douglas, J (1999). Measuring physician job satisfaction in a changing workplace and a challenging environment. SGIM career satisfaction study group. *Society of general internal medicine. Medical Care*. 37(11):1174-82.
- Krebs, E., Garrett, J., & Konrad, T (2006). The difficult doctor? characteristics of physicians who report frustration with patients: An analysis of survey data. *BMC Health Services Research*, 6, 128.
- Kroenke, H., Spitzer, R., Brody, S., Williams, J., Linzer, W., deGruy, F (1996). The Difficult patient: Prevalence, psychopathology, and functional impairment. *J Gen Intern Med*. 11(1),1-8.
- Kumpusalo, E., & Tuomilehto, J (1987). Teaching of primary health care in practice: A model using local health centres in undergraduate medical education. *Medical Education*, 21(5), 432-440.
- Kushnir, T., Levhar, C., & Cohen, A (2004). Are burnout levels increasing? The experience of Israeli primary care physicians. *Israel Medical Association Journal: Imaj*, 6(8), 451-455.
- Kuusio, H., Koivusalo, M., Elovainio, M., Heponiemi, T., Aalto, A-M., Keskimäki, I (2011). Health professional mobility and health systems. Evidence from 17 European countries. Edited by Matthias Wismar, Claudia B. Maier, Irene A. Glinos, Gilles Dussault, Josep Figueras. *European Observatory on Health System and Policies*. 2011, p.163-179.
- Kuusio, H., Elovainio, M., Vänskä, J., Heponiemi, T., Aalto, A., Koivuniemi, S. et al. (2010). Terveystienhuoltohenkilöstön liikkuvuus Suomen ja muiden maiden välillä. (in Finnish). *Suomen Lääkärilehti*, 41(65), 3323-3329.
- Lallukka, T., Chandola, T., Hemingway, H., Marmot, M., Lahelma, E., & Rahkonen, O (2009). Job strain and symptoms of angina pectoris among British and Finnish middle-aged employees. *Journal of Epidemiology & Community Health*, 63(12), 15-15.
- Lammintakanen, J., Kivinen, T., & Kinnunen, J (2010). Managers' perspectives on recruitment and human resource development practices in primary health care. *International Journal of Circumpolar Health*, 69(5), 462-469.
- Landon, B., Reschovsky, J., & Blumenthal, D (2003). Changes in career satisfaction among primary care and specialist physicians, 1997-2001. *JAMA: The Journal of the American Medical Association*, 289(4), 442-449.
- Landsbergis, P., Schnall, P., Deitz, D., Warren, K., Pickering, T., & Schwartz, J (1998). Job strain and health behaviors: Results of a prospective study. *American Journal of Health Promotion*, 12(4), 237-245.
- Landsbergis, P., Schnall, P., Deitz, D., & Friedman, R (1992). The patterning of psychological attributes and distress by 'job strain' and social support in a sample

- of working men. *Journal of Behavioral Medicine*, 15(4), 379-405.
- Landsbergis, P. (1988). Occupational stress among health care workers: A test of the job demands-control model. *Journal of Organizational Behavior*, 9(3), 217-239.
- Lawler E (1970). Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology*, 54, 305-312.
- Lazarus, R & Folkman S (1984). *Stress, appraisal and coping*. New York, Springer.
- Likourezos, A., Chalfin, D., Murphy, D., Sommer, B., Darcy, K., & Davidson, S (2004). Physician and nurse satisfaction with an electronic medical record system. *The Journal of Emergency Medicine*, 27(4), 419-424.
- Lim, R., & Pinto, C (2009). Work stress, satisfaction and burnout in New Zealand radiologists: Comparison of public hospital and private practice in New Zealand. *Journal of Medical Imaging and Radiation Oncology*, 53(2), 194-199.
- Linzer, M., Manwell, L., Williams, E., Bobula, J., Brown, R., Varkey, A. et al. (2009). Working conditions in primary care: Physician reactions and care quality. *Annals of Internal Medicine*, 151(1), 28-36, W6-9.
- Lundberg, U (1996). Influence of paid and unpaid work on psychophysiological stress responses of men and women. *Journal of Occupational Health Psychology*, 1(2), 117.
- Lynch, D., McGrady, A., Nagel, R., & Wahl, E (2007). The patient-physician relationship and medical utilization. *Primary Care Companion to the Journal of Clinical Psychiatry*, 9(4), 266-270.
- Löytyniemi, V (2001). Doctors drifting: autonomy and career uncertainty in young physicians' stories. *Social Science and Medicine* 52(2001), 227-237.
- Mache, S (2012). Coping with job stress by hospital doctors: A comparative study. *Wiener Medizinische Wochenschrift* (1946), 162(19-20), 440-447.
- Mano-Negrin, R (2001). An occupational preference model of turnover behaviour: The case of Israel's medical sector employees. *Journal of Management in Medicine*, 15(2), 106-124.
- Mannila, S., Reuter, A (2009). Social exclusion risks and their accumulation among Russian-Speaking, ethnically Finnish and Estonian immigrants to Finland. *Journal of Ethnic & Migration Studies*. 35(6), 939-956.
- Markkanen, S (2008). Integration and discrimination: Opportunities and barriers to appropriate paid employment for health-care professional refugees in Finland. *Web Reports* 40. Institute of Migration.
- Mattila, Y (Ed.) (2011). *Suuria käännekohtia vai tasaista kehitystä? Tutkimus suomen terveydenhuollon suuntaviivoista*. Helsinki: The Social Insurance Institution of Finland.
- Mausner-Dorsch, H., & Eaton, W (2011). Psychosocial work environment and depression: Epidemiological assessment of the demand-control model. *American Journal of Public Health*, 90(11), 1765-1770.
- McComb, E (2008). Which psycho-demographic factors predict a doctor's intention to leave New Zealand general practice?. *New Zealand Medical Journal*, 121(1273), 25-36.
- McEwen, B (1998). Protective and damaging effects of stress mediators. *The New England Journal of Medicine*, 338(3), 171-179.
- McKee, M (2008). Solidarity in a unified Europe. *European Journal of Public Health*, 18(1), 2-4.
- Mick, S., & Lee, S (1999). Are there need-based geographical differences between international medical graduates and U.S. medical graduates in rural U.S. counties? *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association*, 15(1), 26-43.
- Mick, S., Lee, S., & Wodchis, W (2000). Variations in geographical distribution of foreign and domestically trained physicians in the United States: 'safety nets' or 'surplus exacerbation'? *Social Science & Medicine*, 50(2), 185-202.
- Morris, A., Phillips, R., Fryer, G., Green, L., & Mullan, F (2006). International medical graduates in family medicine in the United States of America: An exploration of professional characteristics and attitudes. *Human Resources for Health*, 4, 17.
- Mossey, J., & Shapiro, E (1982). Self-rated health: A predictor of mortality among the elderly. *American Journal of Public Health*, 72(8), 800-808.
- MSAH, 2003. Decision in principle by the council of state on securing the future of health care. Ministry of Social Affairs and Health. in http://pre20031103.stm.fi/english/eho/publicat/bro02_6/chap1.htm. (Access 20130415).

- Mullan, F (2005). The metrics of the physician brain drain. *The New England Journal of Medicine*, 353(17), 1810-1818.
- Mullan, F., Politzer, R., & Davis, C (1995). Medical migration and the physician workforce: International medical graduates and American medicine. *JAMA*, 273(19), 1521-1527.
- Nieuwenhuijsen, K., Bruinvels, D., & Frings-Dresen, M (2010). Psychosocial work environment and stress-related disorders, a systematic review. *Occupational Medicine (Oxford, England)*, 60(4), 277-286.
- Noblet, A., Rodwell, J., & McWilliams, J (2006). Organizational change in the public sector: Augmenting the demand control model to predict employee outcomes under new public management. *Work & Stress*, 20(4), 335-352.
- Noyes, R., Holt, C., & Kathol, R (1995). Somatization. diagnosis and management. *Archives of Family Medicine*, 4(9), 790-795.
- O'Connor, D., O'Connor, R., White, B., & Bundred, P (2000). Job strain and ambulatory blood pressure in British general practitioners: A preliminary study. *Psychology, Health & Medicine*, 5(3), 241-250.
- O'Connor, D., O'Connor, R., White, B., & Bundred, P (2000). The effect of job strain on British general practitioners' mental health. *Journal of Mental Health*, 9(6), 637-654.
- OECD (Ed.) (2007). International migration policies and data. International migration outlook SOPEMI 2007 Edition, OECD.
- Occupational Health Care Act. (in Finnish: Työterveyshuoltolaki), (2001). from <http://www.finlex.fi/en/laki/kaannokset/2001/20011383>
- Opetusministeriö (2002). ETA - alueen ulkopuolelta tulevien lääkäreiden ammatinharjoittamisen luvat ja työllistyminen. Opetusministeriön työryhmien muistioita 8:2002. in http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2002/liitteet/opm_497_8_02ETAulkop_laakarit.pdf?lang=fi. (accessed 20130812).
- Pal, S., & Saksvik, P (2008). Work-family conflict and psychosocial work environment stressors as predictors of job stress in a cross-cultural study. *International Journal of Stress Management*, 15(1), 22-42.
- Parmanne, P (2007). Terveyskeskusten lääkäritilanne 3.10.2007. (in Finnish). in <http://www.laakariliitto.fi/files/SLL-tk-kalvot2010.pdf>. (accessed 20100810).
- Parmanne, P., & Vänskä, J (2006). Lääkäri- ja ostopalvelut kasvoivat edelleen. (in Finnish). *Suomen Lääkärilehti*, 61(49-50), 5199-5203.
- Pelfrene, E., Vlerick, P., Kittel, F., Make, R., Kornitzer, M., & De Backer, G (2002). Psychosocial work environment and psychological well-being: Assessment of the buffering effects in the job demand-control (-support) model in BELSTRESS. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 18(1), 43-56.
- Peterson, J., Hall, L. M., O'Brien-Pallas, L., & Cockerill, R (2011). Job satisfaction and intentions to leave of new nurses. *Journal of Research in Nursing*, 16(6), 536-548.
- Pisanti, R (2012). Job demands-control-social support model and coping strategies: Predicting burnout and wellbeing in a group of Italian nurses. *La Medicina Del Lavoro*, 103(6), 466-481.
- Primary Health Care Act (in Finnish: Kansanterveyslaki), (1972). from <http://www.finlex.fi/en/laki/kaannokset/1972/19720066>
- Rodríguez, I., Bravo, M., Peiró, J., & Schaufeli, W (2001). The demands-control-support model, locus of control and job dissatisfaction: A longitudinal study. *Work & Stress*, 15(2), 97-114.
- Rodwell, J., Noblet, A., Demir, D., & Steane, P (2009). The impact of the work conditions of allied health professionals on satisfaction, commitment and psychological distress. *Health Care Management Review*, 34(3), 273-283.
- Rout, U., & Rout, J (1997). A comparative study on occupational stress, job satisfaction and mental health in British general practitioners and Canadian family physicians. *Psychology, Health & Medicine*, 2(2), 181-190.
- Saastamoinen, P., Laaksonen, M., Leino-Arjas, P., & Lahelma, E (2009). Psychosocial risk factors of pain among employees. *European Journal of Pain*, 13(1), 102-108.
- Sanderson, K., & Andrews, G (2006). Common mental disorders in the workforce: Recent findings from descriptive and social epidemiology. *Canadian Journal of Psychiatry/Revue Canadienne De Psychiatrie*, 51(2), 63-75.
- Schrijvers, G. & Freeman, K (2005). Keep primary health care personal! *International journal of integrated care*, 5:e05.
- Selye, H (1985). The nature of stress. *Basal Facts*, 7(1), 3-11.

- Shuval, J (2000). The reconstruction of professional identity among immigrant physicians in three societies. *Journal of Immigrant Health*, 2(4), 191-202.
- Shuval, J., & Bernstein, J (1996). The dynamics of professional commitment: Immigrant physicians from the Former Soviet Union in Israel. *Social Science & Medicine*, 42(7), 965-974.
- Simon, M., Müller, B., & Hasselhorn, H (2010). Leaving the organization or the profession – a multilevel analysis of nurses' intentions. *Journal of Advanced Nursing*, 66(3), 616-626.
- Smith, S (2008). The global workforce shortages and the migration of medical professions: The Australian policy response. *Australia and New Zealand Health Policy*, 5, 7.
- Smith, V., DeVellis, B., Kalet, A., Roberts, J., & DeVellis, R (2005). Encouraging patient adherence: Primary care physicians' use of verbal compliance-gaining strategies in medical interviews. *Patient Education & Counseling*, 57(1), 62-76.
- Statistics Finland (2012). Statistics Finland "unpublished data from the statistics Finland registers". Helsinki.
- Strayhorn, G (1980a). Perceived stress and social supports of black and white medical students. *Journal of Medical Education*, 55(7), 618-620.
- Strayhorn, G (1980b). Social supports, perceived stress, and health: The black experience in medical school-a preliminary study. *Journal of the National Medical Association*, 72(9), 869-881.
- Sundquist, J., & Johansson, S (2000). High demand, low control, and impaired general health: Working conditions in a sample of Swedish general practitioners. *Scandinavian Journal of Public Health*, 28(2), 123-131.
- THL (2009). Yksityinen palvelutuotanto sosiaali- ja terveydenhuollossa. Official statistics of Finland. Helsinki: National Institute for Health and Welfare (THL). in http://www.stakes.fi/tilastot/tilastotiedotteet/2011/Tr33_11.pdf. (accessed 20131208).
- THL (2010). Somaattisen erikoissairaanhoidon vuodeosastotoiminta ja päiväkirurgia 2009. Official statistics of Finland. Helsinki: National Institute for Health and Welfare (THL). in http://www.stakes.fi/tilastot/tilastotiedotteet/2010/Tr34_10.pdf. (accessed 20131208).
- Thompson, M., Hagopian, A., Fordyce, M., & Hart, L (2009). Do international medical graduates (IMGs) "fill the gap" in rural primary care in the United States? A national study. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association*, 25(2), 124-134.
- Töyry, S (2005). Burnout and self-reported health among Finnish physicians. *Kuopion Yliopiston julkaisuja D. Lääketiede* 365. Doctoral Dissertation.
- Ujvarine, A., Zrinyi, M., Toth, H., Zekanyne, I., Szogedi, I., & Betlehem, J (2011). Intent to stay in nursing: Internal and external migration in Hungary. *Journal of Clinical Nursing*, 20(5-6), 882-891.
- Van der Doef, M., & Maes, S (1999). The job demand-control (-support) model and psychological well-being: A review of 20 years of empirical research. *Work and Stress*, 13(2), 87-144.
- Vanagas, G., & Bihari-Axelsson, S (2005). The factors associated to psychosocial stress among general practitioners in Lithuania. Cross-sectional study. *BMC Health Services Research*, 5, 45.
- Vanagas, G., & Bihari-Axelsson, S (2004). Interaction among general practitioners age and patient load in the prediction of job strain, decision latitude and perception of job demands. A cross-sectional study. *BMC Public Health*, 4, 59.
- Van Yperen, N., & Hagedoorn, M (2003). Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support. *Academy of Management Journal*, 46(3), 339-348.
- Verhaeghe, R., Mak, R., Van Maele, G., Kornitzer, M., & De Backer, G (2003). Job stress among middle-aged health care workers and its relation to sickness absence. *Stress & Health: Journal of the International Society for the Investigation of Stress*, 19(5), 265-274.
- Virtanen, P., Oksanen, T., Kivimäki, M., Virtanen, M., Pentti, J., & Vahtera, J (2008). Work stress and health in primary health care physicians and hospital physicians. *Occupational & Environmental Medicine*, 65(5), 364-366.
- Vishwanath, A., Singh, S., & Winkelstein, P (2010). The impact of electronic medical record systems on outpatient workflows: A longitudinal evaluation of its workflow effects. *International Journal of Medical Informatics*, 79(11), 778-791.

- von Thiele, U., Lindfors, P., & Lundberg, U (2006). Self-rated recovery from work stress and allostatic load in women. *Journal of Psychosomatic Research*, 61(2), 237-242.
- Vuorenkoski, L (2008). Health systems in transition. Edited by Philipa Mladovsky and Elias Mossialos, European Observatory on Health Systems and Policies.
- Vänskä, J., & Kangas, M (2008). Lääkäri- ja hoitajien taustalla paikalliset ongelmat. (in Finnish). *Suomen Lääkärilehti* 50(63), 4436-4440.
- Williams, E., Konrad, T., Scheckler, W., Pathman, D., Linzer, M., McMurray, J. et al. (2001). Understanding physicians' intentions to withdraw from practice: The role of job satisfaction, job stress, mental and physical health. *Health Care Management Review*, 35(2), 105-115.
- Williams, F., & Boren, S (2008). The role of the electronic medical record (EMR) in care delivery development in developing countries: A systematic review. *Informat-ics in Primary Care*, 16(2), 139-145.
- Winblad, I., Hyppönen, H., Vänskä, J., Reponen, J., Viitanen, J., Elovainio, M. et al. (2010). Potilastietojärjestelmät tuotemerkeittäin arvioitu: Kaikissa on kehitettävää. (in Finnish). *Suomen Lääkärilehti*, 50-52(65), 4185-4194.
- Xyrichis, A., & Ream, E (2008). Teamwork: A concept analysis. *Journal of Advanced Nursing*, 61(2), 232-241.
- Yao-Mei Chen, Sue-Hui Chen, Chiu-Yueh Tsai, & Liang-Yueh Lo (2007). Role stress and job satisfaction for nurse specialists. *Journal of Advanced Nursing*, 59(5), 497-509.